STARICHKOV, Vladimir Semenovich; OSTROVA, I.M., red.; MALINOVSKIY, Yu.F., red.; KYAZOV, N.F., nauchnyy red.; PERSON, M.N., tekhn. red.

[An aid for the master machinist]V pomoshch' masteru-slesariu; (al'bom). Moskva, Proftekhizdat, 1961. 225 p. (MIRA 15:8)

(Metal cutting)

DUDKIN, M.S.; STARICHKOVA, V.Ye.

Effect of the vibration milling on the hydrolysis of polysaccharides of millet hulls. Izv.vys.ucheb.zav.;pishch.tekh. no.5:105-109 '58. (MIRA 11:12)

1. Odesskiy tekhnologicheskiy institut imeni I.V.Stalina, kafedra organicheskoy khimii.
(Millet) (Polysaccarides) (Hydrolysis)

STARICHKOVA, V.Ye.

Effect of different grinding methods on th[illegible] the polysaccharides of millet husk. Izv. vys. ucheb. zav.; pishch. tekh. no.2:22-26 '60. (MIRA 14:7)

1. Odesskiy tekhnologicheskiy institut imeni I.V. Stalina.
(Millet)
(Polysaccharides)
(Hydrolysis)

STARICHKOVA, V.Ye.; DUDKIN, M.S.; GLADNEVA, A.N.; MAKSIMENKO, N.S.

Preparation of fodder yeast from millet hulls. Gidroliz. i lesokhim. prom. 16 no.1:9-11 '63. (MIRA 16:2)

1. Odesskiy tekhnologicheskiy institut im. M.V.Lomonosova (for Starichkova, Dudkin). 2. Krasnodarskiy gidroliznyy zavod (for Gladneva, Maksimenko).
(Yeast as feeding stuff)

STARIHA, Franci, ing. (Licki Osik)

Pin bearings today. Stroj vest 7 no. 4-5:100-104 0 61.

1. Tvornica MOL, Licki Osik..

STARIHA, Franci, inz. (Licki Osik, AS-3)

Reconstruction of roller bearings for the lubricants of railroad cars. Tehnika Jug 17 no.11:Suppl.: Masinstvo 11 no.11:2109-2119 N '62.

1. Konstruktor kotrljajucih lezajeva u tvornici "Mol", Liski Osik.

STARIHA, Franci, dipl. inz. strojnistva

Selection of roller bearings. Stroj vest 9 no.4/5:109-116 O '63.

1. BELT, Crnomelj.

STARIHA, Franci, inz., konstruktor kotrljajucih lezista (Licki Osik AS-3, SR Hrvatska)

Analysis of the pressing process in the manufacture of rings and races for antifriction bearings. Tehnika Jug 18 no.10: Supplement: Masinstvo 12 no.10:1873-1881 0'63.

1. Tvornica "Mol", Licki Osik.

STARIHA, Franci, inz.

Control in the production of ball bearings. Nova proizv 15 no.1/2:68-80 '64.

Starik, A.M.

AUTHORS: Golubchin, G.N., Starik, A.M. 57-9-22/40

TITLE: The Dependence of the Efficiency of the Auxiliary Discharge in Broad-Band Dischargers Upon the Position of the Ignition Electrode (Zavisimost' effektivnosti vspomogatel'nogo razryada v shirokopolosnykh razryadnikakh ot polozheniya elektroda podzhiga)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 9, pp. 2089-2091 (USSR)

ABSTRACT: The dependences of the ignition losses and energy losses at the peak (maximum) of broad-band dischargers of the ten centimeter range on the position of the ignition electrode are determined. The character of these dependences is explained by the non-uniform electron density distribution according to the length of the glowing discharge. The maximum of ignition losses and the energy minimum of the peak correspond to such an electrode position in which the high-frequency discharge space is filled by the glowing luminescence. An estimate of the distance between the cathode and the domain of glowing luminescence carried out at the conditions of this experiment was 0,4 to 0,5 mm. There are 4 figures and 1 Slavic reference.

SUBMITTED: December 4, 1956

AVAILABLE: Library of Congress

Card 1/1

in Figures 3 - 10. Figure 3a shows the frequency characteristic of a system in which the diaphragms were spaced at a large distance; Figure 3b shows the characteristic for the case of $l/\lambda_0 = 0.128$. Figure 4 shows the value of the standing wave ratio as a function of l/λ_0 while Figure 5 illustrates the dependence of the interaction coefficient α on l/λ_0; from Figure 5, it is seen that for $l/\lambda_0 > 0.38$, the effect of the higher-order waves is negligible. Figures 6 and 7 illustrate the dependence of the standing wave ratio and α on λ_0/λ_{kp}, where λ_{kp} is the critical wavelength. Figure 8 shows the frequency characteristics of a system having $\lambda/\delta_0 = 0.32$ and $\lambda_0/\lambda_{kp} = 0.653$. The dependence of the standing wave ratio on the Q of the irises is illustrated in Figure 9, while the dependence of α on l/λ_0 for various values of Q is shown in Figure 10. From these experimental results,

Influence of the Higher-order Waves on the Characteristics of a System of Resonant Irises

it is concluded that the higher-order wave interaction can be neglected provided the two irises are spaced at a distance of $l/\lambda_B > 0.25$, where λ_B is the length of the fundamental wave in the waveguide. The authors thank S.A. Sergeyev and S.I. Rudkovskiy for collaboration in carrying out the experiments.
There are 10 figures and 2 references, 1 of which is Soviet and 1 English.

SUBMITTED: October 29, 1957

81156

S/109/60/005/07/001/024
E140/E163

9,2140

AUTHOR: Starik, A.M.

TITLE: Principal Directions in the Development of Antenna TR-Switches (Review)

PERIODICAL: Radiotekhnika i elektronika, Vol 5, No 7, 1960, pp 1035-1051 (USSR)

ABSTRACT: The article presents a survey of American, English, French and Russian work in this field between 1946 and 1958. Principal emphasis is given to integrated systems and plug-in units (inserts) described in Ref 40. The majority of Russian work cited concerns theoretical studies of bandwidth, energy considerations, microwave gas-discharge, etc. See also article on pp 1124-1128 of the present journal. There are 15 figures and 69 references, of which 31 are English, 11 French and 27 Soviet.

SUBMITTED: May 6, 1959, and after revision, October 10, 1959.

Card 1/1

S/109/60/005/07/011/024
E140/E163

Application of Glow Discharge to Electronic Tuning of Transmitter Blocking Discharger

obtained in the device. An electronic tuning band of ± 20% may be obtained with easily obtainable values of electron concentration. The maximum loss in the 3-cm band should not exceed 1.5 dB. The necessary concentrations may be obtained using the cathode portion of a glow discharge. Using plasma, with an appreciably lower electron concentration, the length of the device must be increased substantially.
There are 2 figures, 2 tables and 7 references, of which 1 is Soviet and 6 are English.

SUBMITTED: November 21, 1959

Card 2/2

28528
S/109[illegible]61/006/009/011/018
D201/D302

9.3150 (also 1049, 1502, 1482)

AUTHOR: Starik, A.M.

TITLE: Propagation of microwaves in a waveguide containing cathode parts of a glow discharge

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 9, 1961, 1433 - 1539

TEXT: The present paper presents certain data obtained from the study of model waveguides with cold cathodes of considerable length inside them. The experimental sections of the waveguide are shown diagrammatically in Fig. 1. The first had the cathode in the shape of a c[illegible]cular wire 0.4 mm diameter, stretched at an angle to the waveguide to provide correct matching. The second construction had the shape of a rhombic plate 0.4 mm thick. Both ends of the waveguide had very low q glass resonant windows. After proper evacuation, the final gas pressure was established and the phase shift and attenuation experimentally [illegible]asured as functions of neon and

Card 1/5

Propagation of microwaves in ...

helium pressure in the waveguide. The phase shift was measured from the shift of the mode of the standing wave. Results of various models were within 10 % of each other. Slightly larger than for the phase, the results of attenuation determination were due to incomplete evacuation of the device, showing more in the attenuation than in the phase shift. The results of measurements of attenuation L and phase shift θ as functions of neon pressure in plane cathode models for current I = 12 mA are shown graphically. The overall area of the cathode was 8.65 cm^2 with the resulting cathode current density j_k = 1.4 mA/cm^2. The SWVR of the waveguides 10 x 23 mm did not exceed 1.15 in the absence of discharge. Similar in character the dependence of L and θ on neon pressure was found in waveguides 4 x 23 mm. Comparative results for different waveguide dimensions are tabulated, giving the pressures corresponding to maxima of curves (p_{max}) and the phase shift values of the maxima for every case. The interelectrode distance h used to be determined as the distance between the internal surface of the wide wall of the waveguide and the nearest surface to it, of the cathode h =

Card 2/5

Propagation of microwaves in ...

(b - t)/2 where t - thickness of cathode. It is shown that p_{max}, as determined from the attenuation curve, varies inversely proportional to the interelectrode distance. Figures show the dependence of the phase shift attenuation of discharge to potential U_p decrease on pressure at various points of discharge, for waveguides filled with neon and having a cylindrical cathode, the dependence on pressure of the quantity $F = 100(L/\theta)$, where L is in db and θ in degrees, F as function of pressure with helium-filled waveguides. It is stated in conclusion that the phase shift and attenuation produced by cathode parts of the glow discharge in rectangular waveguides exhibits sharp maxima with varying pressure. This maximum is in the region where $\nu_{cal} \leq \omega$ (ν_{cal} - frequency of collisions). These maxima could be explained by the shift of the virtual cathode surface, as the result of which the effective interaction between SHF oscillations and plasma is reduced for pressures greater than p_{max}. The smaller displacement of the maximum of the phase shift

Card 3/5

STARIK, A.M.

Cathode field of an anomalous glow discharge in a waveguide. Radiotekh. i elektron. 10 no.4:779-780 Ap '65. (MIRA 18:5)

L 1170-66

ACCESSION NR: AP5017661 UR/0109/65/010/007/1250/1251
621.372.852.2/.3

40
B

AUTHOR: Starik, A. M.

TITLE: Estimating the density of electrons in a hollow-cathode gas-discharge attenuator

SOURCE: Radiotekhnika i elektronika, v. 10, no. 7, 1965, 1250-1251

TOPIC TAGS: attenuator, gas discharge attenuator

ABSTRACT: Operation of an original gas-discharge attenuator, in which the entire internal surface of the waveguide acts as a hollow cathode and an anode is mounted externally, is considered. An experimental attenuation-per-cm-length vs. cathode-current-density curve for a 7.2x3.4-mm waveguide is shown. An electron density of 1.6×10^{13} per cm^3, at a He pressure of 50 torr, and a cathode-current density of 32 ma/cm^2 is estimated. Orig. art. has: 2 figures and 5 formulas.

ASSOCIATION: none

SUBMITTED: 22May64 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 004

Card 1/1 DP

USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1234

Author: Starik, I. Ye., Starik, A. S., Lozhkina, G. S., and Talitskaya, L. V.

Institution: Academy of Sciences USSR

Title: A Method for the Determination of Ionium

Original Periodical: Byul. komis. po opredeleniyu absolyut. vozrasta geol. formatsiy AN SSSR, 1955, Vol 1, 47-52

Abstract: After dissolution of the resin in HNO_3 the Th isotopes are deposited on Ce (carrier) as the oxalates. RaD, RaE, and Po are separated by electrolysis in 1 N HNO_3 by passing a 100 ma, 2.1 v current through the solution for 9 hours. UX_1 is used as an indicator for the completeness of Io separation. It has been established that: (1) Complete removal of Ra and U is achieved by double deposition of Ce(Io) oxalate; (2) the deposit of Ce oxalate after double deposition adsorbs 7-12% Po, >30% RaE, and 2-3% RaD; and (3) when H_2S is utilized to separate Ce(Io) from RaD, RaE, and RaF, complete separation is

Card 1/2

USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1234

Abstract: achieved, with the adsorption, however, of 30% of the Io on the sulfide precipitate.

Card 2/2

STARIK, I.Ye.; RATNER, A.P. [deceased]; GROSHKOV, G.V.; MURIN, A.N.; STARIK, A.S.; GREBENSHCHIKOVA, V.I.; KLOKMAN, V.P.; NEFEDOV, V.D.; LUR'YE, B.G.; ISHINA, V.A.; SMIRNOV, L.A.; YEFIMOVA, Ye.I.; TOROPOVA, M.A.; SIMONYAK, Z.N.; FRENKLIKH, M.S.; SHCHEMELEVA, Ye.V., redaktor; VODOLAGINA, S.D., tekhnicheskiy redaktor

[A collection of practical studies in radio chemistry] Sbornik prakticheskikh rabot po radiokhimii. [Leningrad] 1956. 210 p. (MLRA 10:1)

1. Leningrad. Universitet.
(Radiochemistry)

STARIK, I.Ye.; STARIK, A.S.; YASHUGINA, Ye.A.; SMIRNOVA, Ye.A.

Quantitative separation of actinium from radioactinium and actinium X. Trudy Radiev.inst.AN SSSR. 8:170-176 '58. (MIRA 12:2)

(Actinium--Analysis)

STARIK, A.S.; LEONT'YEV, V.G.

Method for determining microdoses of cesium from biological samples. Vop. med. khim. 7 no.5:537-539 S-O '61. (MIRA 14:10)

1. The I.M.Sechenov Institute of Evolutional Physiology of the Academy of Sciences of the U.S.S.R.
(CESIUM--ANALYSIS)

SHAKHIDZHANYAN, L.G.; STARIK, A.S.; FIEYSHMAN, D.G.; GLAZUNOV, V.V.; LEONT'YEV, V.G.; NESTEROV, V.P.

Distribution of radioactive cesium and strontium in human and animal organs. Izv. AN SSSR. Ser. biol. no.3:442-448 My-Je '62. (MIRA 15:6)

1. Institute of Evolutionary Physiology, Academy of Sciences of the U.S.S.R., Leningrad.
(CESIUM--ISOTOPES) (STRONTIUM--ISOTOPES)
(RADIOISOTOPES--PHYSIOLOGICAL EFFECT)

STARIK, D.E., kand.tekhn.nauk

Preliminary determination of the cost of engines.
Trudy MAI no.151:47-59 '62. (MIRA 15:12)
(Airplanes--Engines--Cost)

ANDRIANOV, D.P., doktor ekon. nauk, prof.; GENDEL'MAN, M.Z., kand. tekhn. nauk, dots.; GLICHEV, A.V., kand. ekon. nauk, dots.; DIDENKO, S.I., kand. ekon. nauk, dots.; ZHURAVLEV, A.N., kand. tekhn.nauk, prof.; ZAKHAROV, K.D., kand. tekhn.nauk,, dots.; MOISEYEV, S.V., kand. tekhn. nauk, dots.; OL'SHEVETS, L.M., kand. tekhn. nauk, dots.; ORLOV, N.A., prof.; POPOV, P.G., ispolnyayushchiy obyazannosti dots.; SARKISYAN, S.A., kand. ekon. nauk, dots.; STARIK, D.E., kand. tekhn.nauk, ispolnyayushchiy obyazannosti dots.; TER-MARKARYAN, A.N., kand. tekhn. nauk, prof.; TIKHOMIROV, V.I., kand. tekhn.nauk, prof.; CHESNOKOV, V.V., kand. ekon. nauk, dots.; SHERMAN, Ye.I., kand. ekon. nauk, dots.; EL'BERT, L.M., kand. ekon. nauk, dots.; LAPSHIN, A.A., dots., retsenzent; NOVATSKIY, V.F., kand. ekon. nauk, red.; TUMYANSKAYA, F.G., red. izd-va; KARPOV, I.I., tekhn. red.

[Organization, planning and economics of airplane production] Organizatsiia, planirovanie i ekonomika aviatsionnogo proizvodstva. [By] D.P.Andrianov i dr. Moskva, Oborongiz, 1963. 694 p. (MIRA 16:10)
(Airplane industry--Management)

S/2535/63/000/154/0070/0080

ACCESSION NR: AT4031065

AUTHOR: Starik, D. E. (Candidate of Technical Sciences); Smirnova, A. P. (Engineer); Yegorov, V. M. (Engineer)

TITLE: The planning of work according to the experimental-structural theme

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 154, 1963. Ekonomicheskaya effektivnost' aviatsionnoy tekhniki (economic efficiency in aeronautical engineering), 70-80

TOPIC TAGS: economic efficiency, expenditure, experimental structural theme, operation planning, calendar planning

ABSTRACT: The authors shed light on some questions of preliminary determination of the expenditures on an experimental-structural theme and associated problems of operation-calendar planning for experimental production. The basis for the initiation of the experimental-structural work includes: the naming of products, the object for which the product is intended, the product customer, the neighboring organizations, the amount of products sent to the customer and the completion periods, and sources of financing (state budget or self-support). The results were

Card 1/2

ACCESSION NR: AT4031065

presented in graphs and tables. The authors also determined the work capacity of fulfilling the stages and substages, and showed the composition of the planned calculation. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Moscow Aviatsionnyy institut (Moscow Institute of Aeronautics)

SUBMITTED: 00 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: AD NO REF SOV: 000 OTHER: 000

Card 2/2

STARIK, F. Ye.

1ST AND 2ND ORDERS

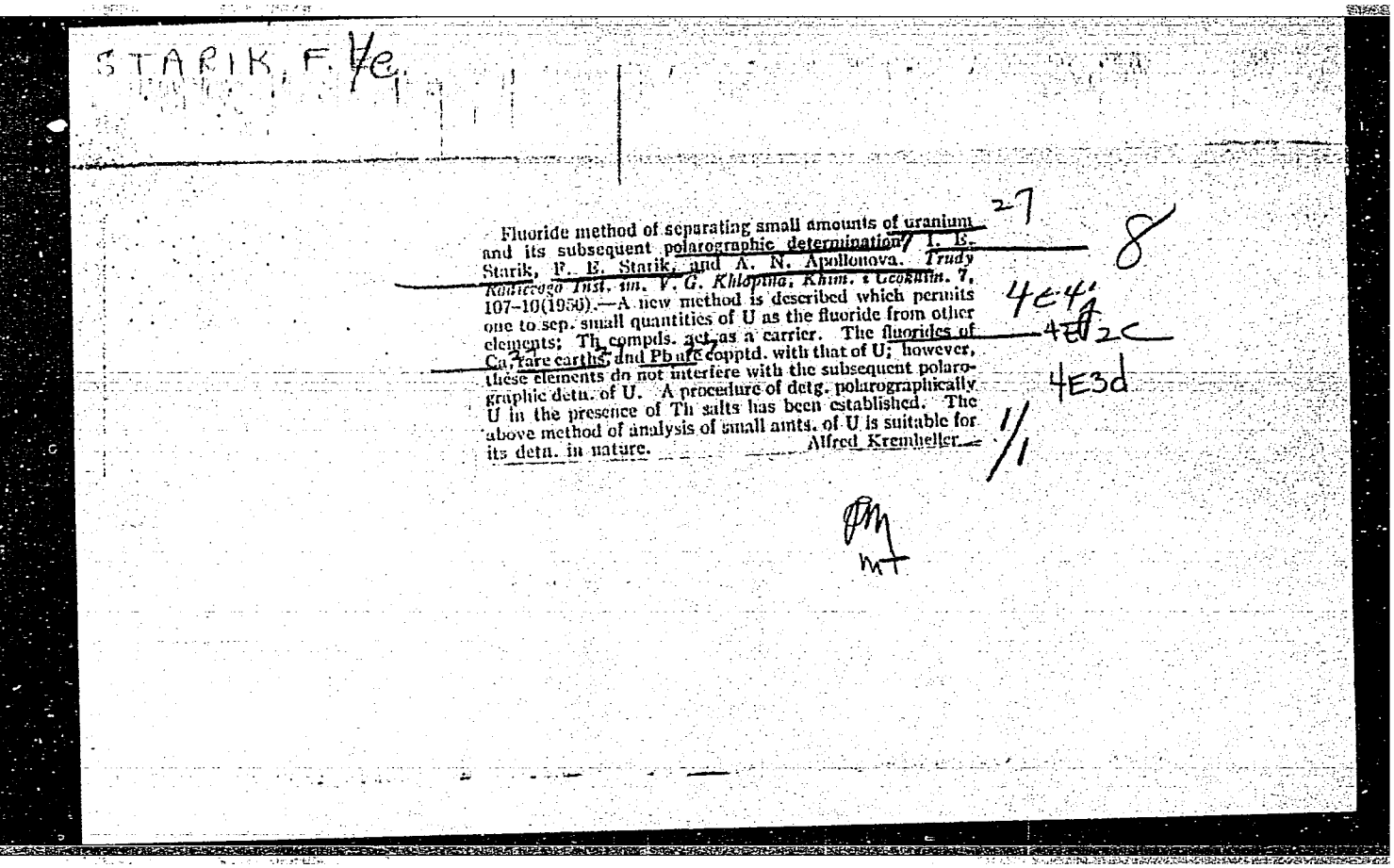
PROCESSES AND PROPERTIES INDEX

Radium content of petroleum waters of the Island Chéléken. N. V. Tageeva and F. E. Starik. *Compt. rend. acad. sci. U. R. S. S.* 1931A, 163 7.—The waters accompanying petroleum in the Island Chéléken contain 4.37 6.75 $\times 10^{-11}$ g. of Ra as sol. Ra salts per liter. For the detn. of Ra content a standardized universal electroscope was used, supplemented by ionization chambers. [illegible]

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

STARIK, F.E.

Relative leaching of uranium and radium isotopes from uraninite. I. E. Starik, F. E. Starik, and E. P. Petrunev. *Bull. Komitet Opredelen. Absolyut. Vozrasta Geol. Formatsii, Akad. Nauk S.S.S.R.* 1935, No. 1, 29–32.— From 1 to 5-g. samples of uraninite particles (dimensions 0.5–1.0 mm.) contg. 54.3 ± 0.3 wt. % U, 1.3×10^{-7} ± 0.06 g. Ra/g. mineral, and 2.3 ± 0.1 wt. % Th were leached with HNO_3, H_2O, and Na_2CO_3 at room temp. for one week. The amts. of leached U and Ra in 0.1, 0.01, 0.001, 0.0001*N* $HCNO_3$, distd. water, and 0.001, 0.01, 0.1*N* Na_2CO_3 were, resp.: 11 ± 1.5, 11.2 ± 0.8; 1.6 ± 0.1, 3.5 ± 0.05; 0.007 ± 0.001, 0.2 ± 0.015; 0.007 ± 0.001, 0.1 ± 0.01; 0.004 ± 0.0005, 0.075 ± 0.005; 0.03 ± 0.007, 0.016 ± 0.002; 0.4 ± 0.07, 0.09 ± 0.003; and 1.8 ± 0.1, 0.25 ± 0.05 wt. %. With respect to U, as data show, Ra was leached preferentially in every case. A. P. Kotelnikov



STARIK, F. Ye.

Fluoride method of separating small amounts of uranium and its subsequent polarographic determination / I. E. Starik, F. E. Starik, and A. N. Apollonova. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 107–10(1950).—A new method is described which permits one to sep. small quantities of U as the fluoride from other elements; Th compds. act as a carrier. The fluorides of Ca, rare earths, and Pb are coprecipitated with that of U; however, these elements do not interfere with the subsequent polarographic detn. of U. A procedure of detg. polarographically U in the presence of Th salts has been established. The above method of analysis of small amts. of U is suitable for its detn. in nature. Alfred Kremheller

27

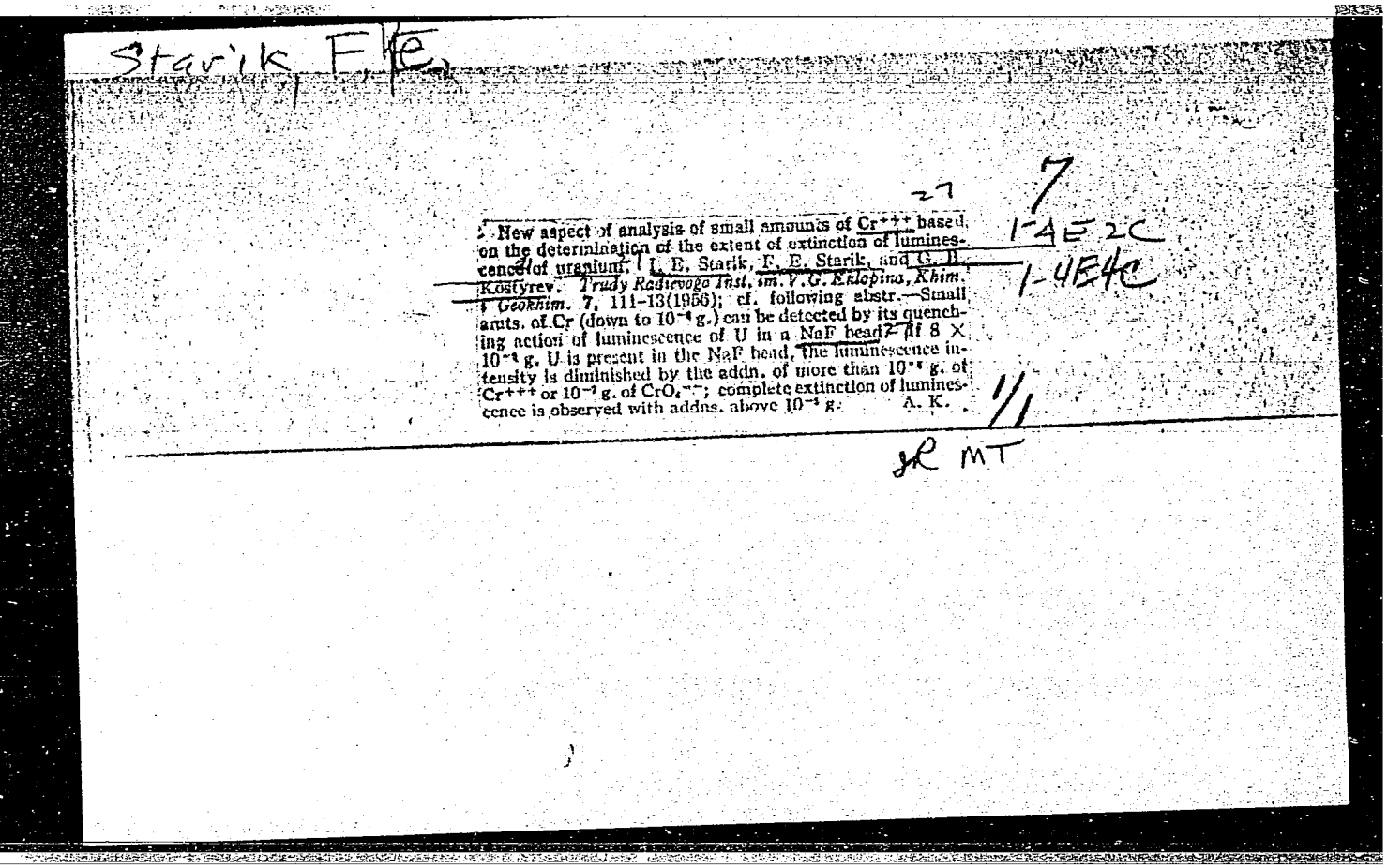
8

4E4f

4E2c

4E3d

1/1



Starik, F. E.

27

7

1-4E2C

1-4E4C

New aspect of analysis of small amounts of Cr^{+++} based on the determination of the extent of extinction of luminescence of uranium. I. L. E. Starik, F. E. Starik, and G. B. Kostyrev. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 111-13(1956); cf. following abstr.—Small amts. of Cr (down to 10^{-6} g.) can be detected by its quenching action of luminescence of U in a NaF bead. If 8×10^{-8} g. U is present in the NaF bead, the luminescence intensity is diminished by the addn. of more than 10^{-6} g. of Cr^{+++} or 10^{-7} g. of CrO_4^{--}; complete extinction of luminescence is observed with addns. above 10^{-5} g. A. K.

1/1

JR MT

STARIK, I. E.

10

4E3d
4E4c

Influence of various elements on the luminescence of uranium in sodium fluoride. I. E. Starik, E. Ya. Starik, L. Ya. Atrashenok, G. B. Kostyrev, V. N. Kosyakov, and A. Ya. Krylov. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 114–25(1956); cf. *C.A.* 51, 17573e.—The influence of 45 elements upon the luminescence of U in NaF has been studied. According to their behavior, the elements can be essentially arranged in 5 classes: (1) Na, K, Rb, Zn, Ti, S, Mo, W, Cl, Br, and I do not exhibit a marked influence, even if they are present in large amts.; (2) Be, La, Th, P, Ni, Fe, Mn, Cu, Sr, Cd, Mg, B, Se, Cs, Zn, Ba, Li, and Si cause quenching of luminescence, if they are present in amts. of several % of the wt. of the NaF bead; (3) Ag, Hg, Pb, Bi, Cr, and Co are strongly quenching elements, if their quantity is several tenths of 1% of the wt. of the bead; (4) Ca, Al, Tl, and Sn induce an increase in luminescence intensity or a change in its color; and (5) Ce, V, Nb, Ta, and Sb exhibit their own emission in NaF. Some elements show double action depending on their concentration; for instance, the luminescence is enhanced at a certain concentration, while it is quenched if the concentration is increased. It is suggested that the determination of uranium should be feasible in some liquids, without previous separation, by luminescence analysis. 29 literature references.

Alfred Hirschfelder

MT

STARIK, F. Ye.

STARIK, I.Ye.; STARIK, F.Ye.

Chromatographic analysis of small quantities of lead. Trudy Radiev. inst. AN SSSR 5 no.2:129-133 '57. (MLRA 10:8)
(Lead) (Chromatographic analysis)

STARIK, F. YE.,

Starik, F. Ye., A. N. Yelizarova - Comparative Leaching Out of Several Isotopes.

The Sixth Session of the Committee for Determining the Absolute Age of Geologic Formations at the Department of Geologic-Geographical Sciences (OGGN) of the USSR Academy of Sciences at Sverdlovsk in May 1957

Izv. Ak Nauk SSSR, Ser. Geol., No. 1, 1958, p. 115-117 author Pekarskaya, T. B.

STARIK, I.Ye.; STARIK, F.Ye.; YELIZAROVA, A.I.; PANAYEV, Ye.P.

Leaching AcX from minerals. Biul.Kom. po opr.abs.vozr.geol.form. no.3:60-61 '59. (MIRA 12:11)
(Leaching) (Radium--Isotopes)

STARIK, F. Ye.

78-1-23/43

AUTHORS: Starik. I. Ye., Starik. F. Ye., Apollonova, A. N.

TITLE: Adsorption of Micro Quantities of Uranium by Ferric Hydroxide and Desorption by Means of the Carbonate-Method. (Adsorbtsiya mikrokolichestv urana gidrookis'yu zheleza i desorbtsiya yego karbonatnym metodom).

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 1, pp. 121-128 (USSR).

ABSTRACT: The adsorption of uranium on iron is important for analytical chemistry, since iron is often used as a carrier substance. The authors used U^{233} in their investigations.
First the adsorption on ferric hydroxide with increasing pH is investigated. Carbonate-free ammonia serves here as basis. The maximum in the curve between pH 5 and pH 8 is explained by the fact that the hydroxide colloids are charged with the same signs outside of this range. This was electrophoretically proved. In carbonate solution the curve shows first a similar course which, however, declines steeply after pH 5,3, since uranium dissolves as complex carbonate and iron precipitates completely. The precipitation in ammoniacal medium was investigated with various quantities of uranium and iron with respect to its completenss. The precipitations and their results are summarized in a table.

Card 1/3

Adsorption of Micro Quantities of Uranium by Ferric Hydroxide and Desorption by Means of the Carbonate-Method. 78-1-23/43

Prior to their dealing with desorption, the authors investigate the influence of the alkali carbonates, especially of the ammonium carbonate, on the precipitation of the iron. Further the desorption of uranium is investigated, quantities of 10^{-5} g are quantitatively desorbed, with quantities of 10^{-6} - 10^{-8} g, however, losses up to 35% occur. This is attributed to the penetration of uranium into glass or platinum with the evaporation of the acid solution, as is proved. These losses can be avoided by adding metatitanic acid.

Conclusions:

1) The coprecipitation of micro quantities of uranium with ferric hydroxide takes place by adsorption.
2) The capability of adsorption depends on the pH of the solution in ammoniacal- and carbonate solution.
3) Micro quantities of uranium precipitate with metatitanic acid under certain conditions.
4) The conditions of desorption of micro quantities of uranium (10^{-5}g - 10^{-8}g) from ferric-hydroxide-colloid (U:Fe = 1:10^{5}) were determined by the carbonate-method.
5) The conditions of complete separation of micro quantities of uranium (10^{-5} - 10^{-8}g) from solutions by means of adsorption with ferric hydroxide were determined.

Card 2/3

Adsorption of Micro Quantities of Uranium by Ferric Hydroxide and Desorption by Means of the Carbonate Method. 78-1-23/43

There are 5 figures, 8 tables, and 24 references, 13 of which are Slavic.

SUBMITTED: June 18, 1957.

AVAILABLE: Library of Congress.

Card 3/3

SOV/7-58-5-7/15

AUTHORS: Starik, I. Ye., Starik, F. Ye., Mikhaylov, B. A.

TITLE: On the Problem of the Shift of Isotopic Ratios in Natural Formations (K voprosu o smeshchenii izotopnykh sootnosheniy v prirodnykh obrazovaniyakh)

PERIODICAL: Geokhimiya, 1958, Nr 5, pp. 462 - 464 (USSR)

ABSTRACT: The method suggested by V.V.Cherdyntsev (Refs 8,9) makes use of the measurement of the alpha and beta activity for the determination of the U II - U I ratio. The small β-activity can, however, be measured only with a low accuracy: therefore the authors of this article modified this method. As U II has a considerably shorter half life than U I the U II amount may be neglected and the total amount of uranium may be taken as measuring standard for U I. The sum of U I and U II is determined by the alpha activity. Polonium was electrolytically separated in the radiochemical purification, the thorium isotopes were separated by the precipitation with cerium fluoride and radium isotopes by the precipitation with barium sulfate. Aluminium and iron were separated by means of ammonium carbonate. Uranium was determined by weighing. Uranium was separated

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from a 0,4 m ammonium oxalate solution onto a target and the alpha activity was determined by means of an apparatus of the type ΔA. By means of this method some minerals of different age were investigated (Table 1): uraninite, pitchblende, uranium pitch ore, and schroekingerite (Shrekengerit). Only the last mentioned, which is a quaternary formation, showed a deviation of the isotopic ratio of uranium. Furthermore the effect of the leaching out with HNO_3 and Na_2CO_3 on the isotopic ratio was investigated (Table 2). An effect was demonstrated only in the leaching out of uraninite by means of Na_2CO_3. At present the authors of this article investigate the kinetics of the sublimation of uranium from pitchblende. The isotopic ratio of sublimated uranium (800°) was determined. There are 2 tables and 11 references, 8 of which are Soviet.

ASSOCIATION: Radiyevyy institut im.V.G.Khlopina AN SSSR, Leningrad (Leningrad Radium Institute imeni V.G.Khlopin, AS USSR)

On the Problem of the Shift of Isotopic Ratios in Natural Formations

SOV/7-58-5-7/15

SUBMITTED: July 22, 1957

Card 3/3

STARIK, I.Ye.; NIKOLAYEV, D.S.; STARIK, F.Ye.; MELIKOVA, O.S.

Uranium content in natural waters of the U.S.S.R. Report No.1. (MIRA 12:2)
Trudy Radiev.inst.AN SSSR. 8:250-261 '58.
(Uranium) (Water--Analysis)

STARIK, I.Ye.; STARIK, F.Ye.; APOLLONOVA, A.N.

Carbonate method for separating microquantities of uranium form iron. Trudy kom.anal.khim. 9:264-273 '58. (MIRA 11:11)
(Uranium) (Iron)

SOV/75-14-3-9/29

5(2)
AUTHORS: Starik, I. Ye., Starik, F. Ye., Lazarev, K. F.

TITLE: Photometric Determination of Micro-Quantities of Thorium (Fotometricheskoye opredeleniye mikrokolichestv toriya)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3, pp 306-312 (USSR)

ABSTRACT: The optical conditions for the photometric determination of thorium were devised on the basis of standard curves by means of the colorimetric photometer FEK-M using thoron as reagent. As can be seen from the figure the influence exercised by Ce and La upon the light absorption is suppressed at pH 0.96 - 0.85. Small calcium amounts do not disturb. The separation of thorium from sodium, potassium, calcium, and barium is carried out by precipitation of thorium together with $Fe(OH)_3$. The quantitative precipitation was checked with UX_1 and RdTh. The separation of thorium from iron and uranium was carried out in weakly acid solution by precipitation with calcium oxalate. The mean absolute error was ± 0.3 γ at 1 - 10 γ Th

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Photometric Determination of Micro-Quantities of Thorium

SOV/75-14-3-9/29

The maximum error does not exceed ± 0.5γ. There are 1 figure, 4 tables, and 23 references, 5 of which are Soviet.

ASSOCIATION: Radiyevyy institut AN SSSR, Leningrad imeni V. G. Khlopina (Institute of Radium imeni V. G. Khlopin, Academy of Sciences, USSR, Leningrad)

SUBMITTED: February 3, 1958

Card 2/2

S/186/61/003/006/008/010
E040/E185

AUTHORS: Starik, I.Ye., Starik, F.Ye., and Yelizarova, A.N.

TITLE: Direct determination of protactinium and actinium in uranites

PERIODICAL: Radiokhimiya, v.3, no.6, 1961, 749-754

TEXT: Detailed knowledge of the relative concentrations of individual radioisotopes in the various radioactive series of elements is absolutely essential in interpretation of radioactive dating data obtained especially by the lead technique. In case of the actinide series, the radioactive equilibrium between Pa^{231}, Ac^{227} and U^{235} can be determined by a direct measurement only, because indirect methods pre-suppose a priori that such an equilibrium already exists. As a continuation of the previously undertaken investigations of the authors on the radiochemistry of uranites (lead dating and separation of isotopes), a direct determination was made of protactinium and actinium in samples of the same mineral, using methods reported previously (Ref.9: I.Ye. Starik, A.P. Ratner, M.A. Pasvik, L.D. Sheydina, ZhAKh,

Card 1/ 2

Direct determination of protactinium... S/186/61/003/006/008/010
E040/E185

v.12, 1, 87, 1957. Ref.10: I.Ye. Starik, L.D. Sheydina, ZnHKh, v.3, 1, 140, 1958). It was found that radioactive equilibrium exists between protactinium and actinium in well preserved specimens of uranites. Because of this, the authors find it difficult to generalise the results to include various weakly-radioactive minerals. D.M. Ziv and Ye.A. Volkova are mentioned in connection with their contributions in this field.
There are 6 tables and 16 references: 10 Soviet-bloc and 6 non-Soviet-bloc. The English language references read as follows:
Ref.6: A.G. Maddock, G.L. Miles, J.Chem.Soc., s.i., v.2, 248, 1949.
Ref.7: A.V. Grosse, M.S. Agruss, J.Am.Chem.Soc., v.56, 10, 2200, 1934.
Ref.8: A. Grosse, J.Am.Chem.Soc., v.52, 5, 1742, 1930.

SUBMITTED: August 3, 1960

Card 2/2

S/081/62/000/004/014/087
B149/B101

AUTHORS: Starik, I. Ye., Starik, F. Ye., Yelizarova, A. N.

TITLE: Comparative leaching properties of some isotopes

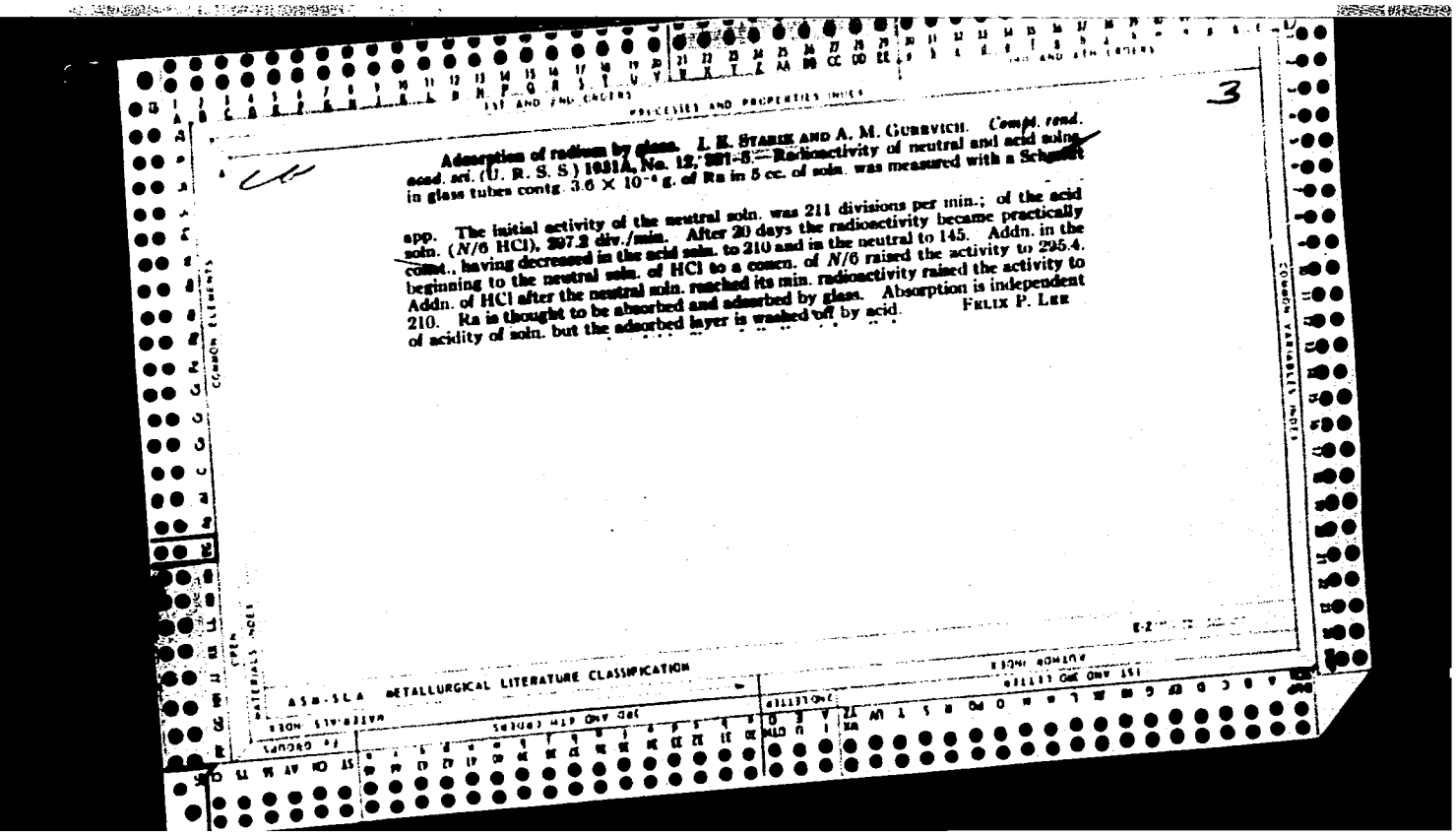
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 113, abstract 4G15 (Byul. Komis. po opredeleniyu absolyutn. vozrasta geol. formatsiy, AN SSSR, no.14, 1961, 160-165)

TEXT: Investigation has been made of leaching the isotopes of Ra, Th, and Pb from specimens of uraninites (from Chkalov and Kamennaya Taybola mines) and monazite (Alakurti). The methods of determination used were as follows: Th by colorimetry; Ra, ThX, AcX, RdTh, RdAc, UX_1 and Ac - radiochemically; Pb - electrolytically; the isotope analysis of Pb by mass-spectrometry. The leaching of Ra isotopes (Ra^{226}, ThX and AcX) has been carried out in 0.1 N HNO_3 from the demolished and intact specimens of uraninite. The demolished specimen showed larger percentage of leaching, and in both specimens AcX and ThX > Ra. The leaching from uraninites of Th has been carried out in 0.1 and 0.01 N HNO_3, 0.1 N

Card 1/2

STARIK, I.Ye.; STARIK, F.Ye.; YELIZAROVA, A.N.

Determination of protactinium and actinium in uraninite. Biul.Kom po opr.abs.vozr.geol.form. no.5:72-75 '62. (MIRA 15:11)
(Uraninite) (Geological time)



3

Adsorption of radium by glass. L. E. Starik and A. M. Gurevich. *Compt. rend. acad. sci. (U. R. S. S.)* 1931A, No. 12, 321–8.—Radioactivity of neutral and acid solns. in glass tubes contg. 3.6×10^{-4} g. of Ra in 5 cc. of soln. was measured with a Schmidt app. The initial activity of the neutral soln. was 211 divisions per min.; of the acid soln. (*N*/6 HCl), 397.2 div./min. After 20 days the radioactivity became practically const., having decreased in the acid soln. to 210 and in the neutral to 145. Addn. in the beginning to the neutral soln. of HCl to a concn. of *N*/6 raised the activity to 295.4. Addn. of HCl after the neutral soln. reached its min. radioactivity raised the activity to 210. Ra is thought to be absorbed and adsorbed by glass. Absorption is independent of acidity of soln. but the adsorbed layer is washed off by acid. Felix P. Lee

CA

2

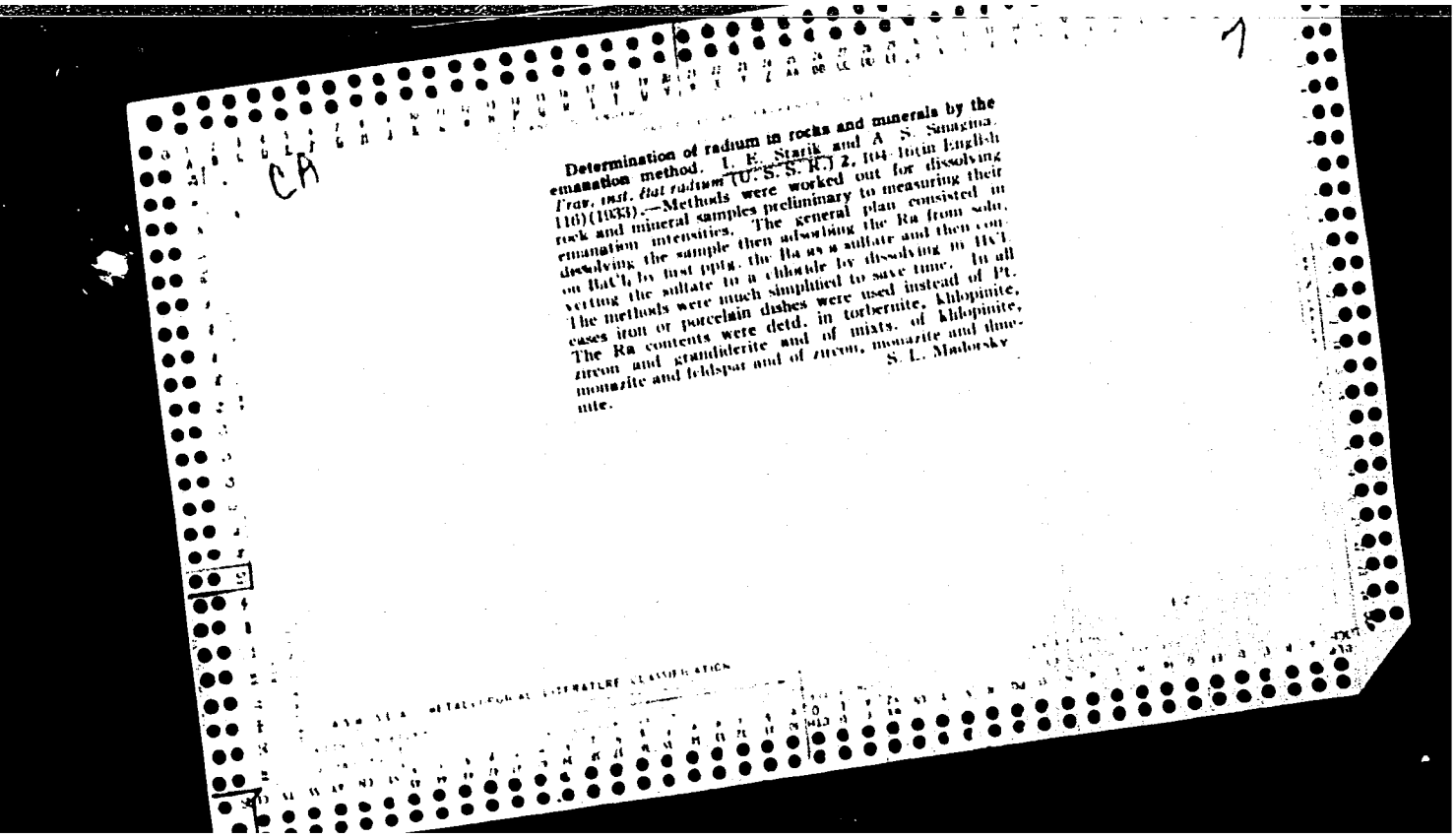
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

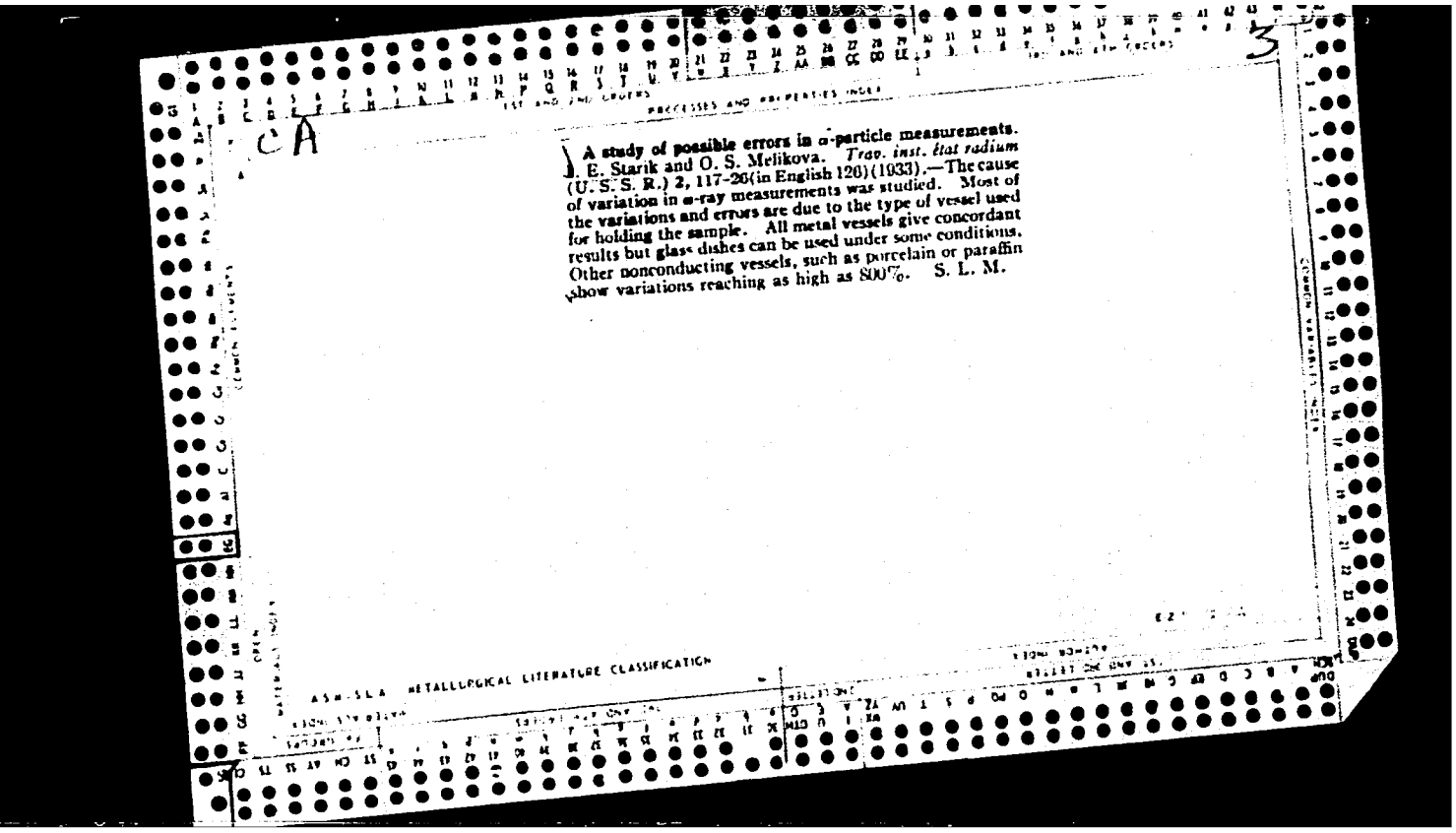
Colloidal properties of polonium. I. E. Starik and L. V. Komlev. *Trav. inst. état radium* (U. S. S. R.) 2, 91-102 (in German 102-3)(1933); cf. *C. A.* 26, 910.—Parchment adsorbs Po better from an acid than from a basic medium. Min. adsorption is obtained from a neutral soln. Adsorption is greater when salts are present. Blood charcoal adsorbs Po from a dil. acid soln. 100%, but from NH_4OH soln. adsorption is min. All this is explained on the basis of colloidal distribution of Po in a basic or neutral medium. S. L. Madorsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Determination of radium in rocks and minerals by the emanation method. L. E. Starik and A. S. Smagina. *Trav. inst. Rad radium* (U. S. S. R.) 2, 104–16(in English 116)(1933).—Methods were worked out for dissolving rock and mineral samples preliminary to measuring their emanation intensities. The general plan consisted in dissolving the sample then adsorbing the Ra from soln. on $BaCl_2$ by ppt. the Ra as a sulfate and then converting the sulfate to a chloride by dissolving in HCl. The methods were much simplified to save time. In all cases iron or porcelain dishes were used instead of Pt. The Ra contents were detd. in torbernite, khlopinite, zircon and granidierite and of mixts. of khlopinite, monazite and feldspar and of zircon, monazite and ilmenite.

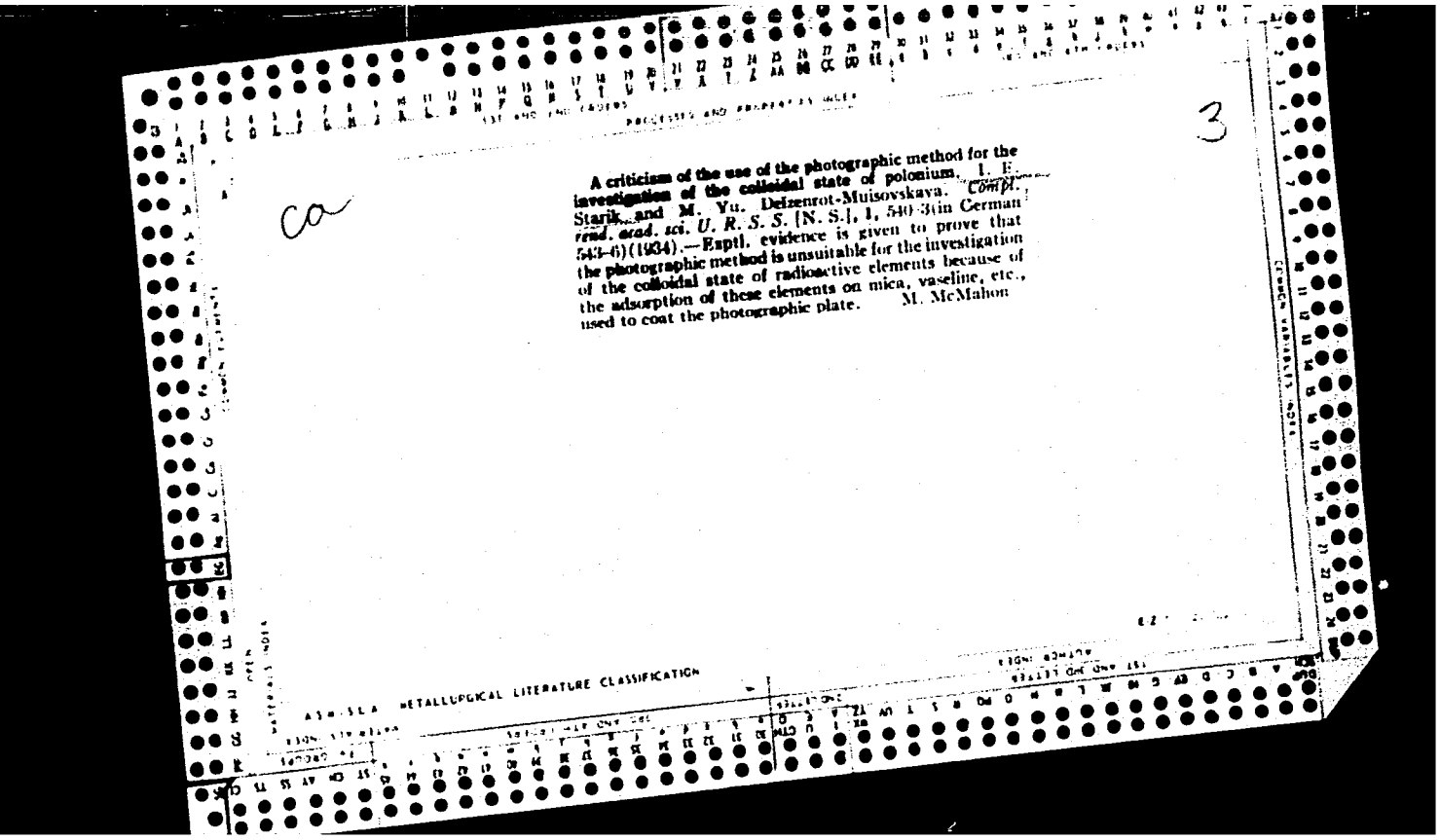
S. L. Madorsky



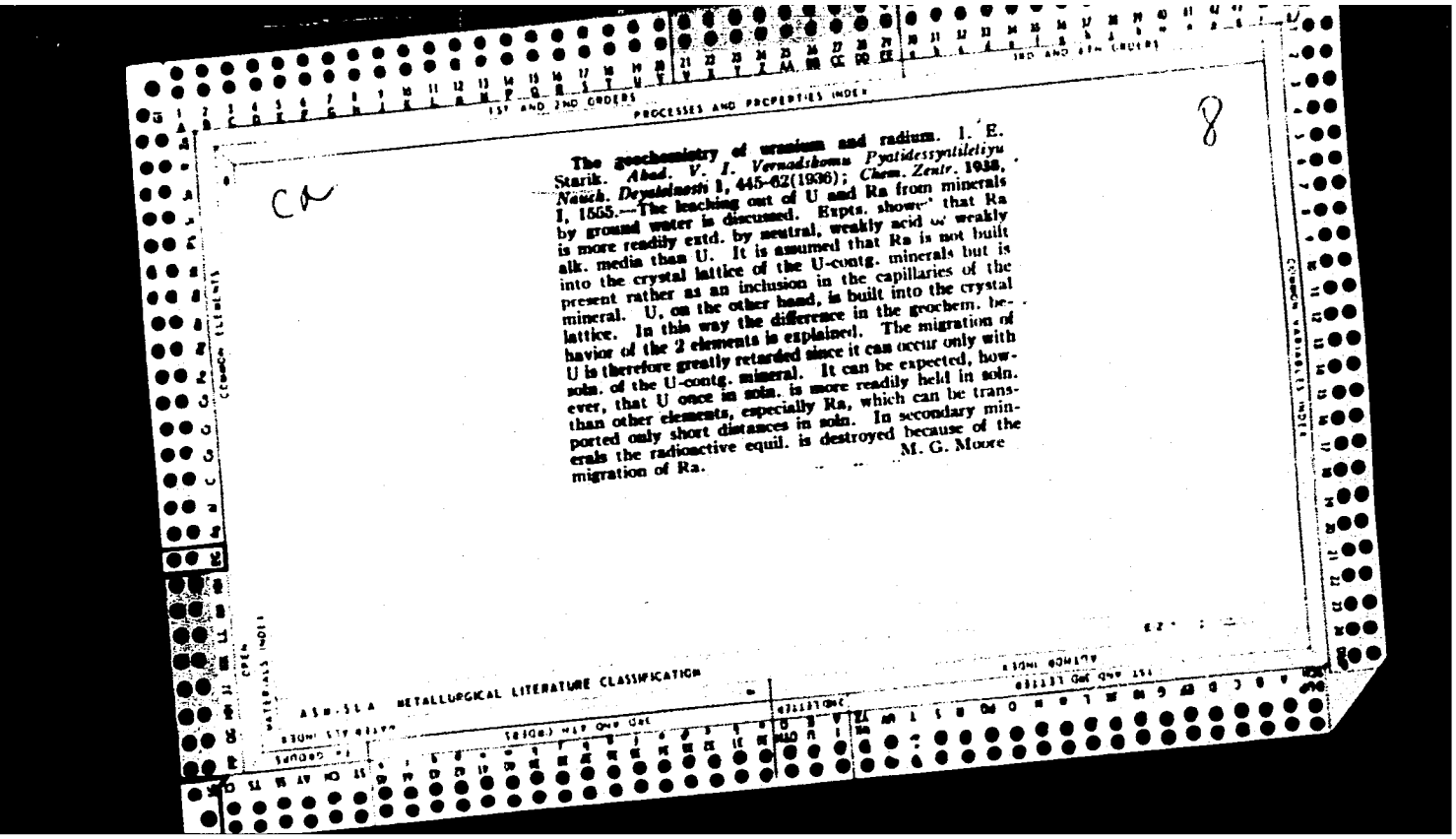
CA

A study of possible errors in α-particle measurements. E. Starik and O. S. Melikova. *Trav. inst. état radium* (U. S. S. R.) 2, 117-26(in English 126)(1933).—The cause of variation in α-ray measurements was studied. Most of the variations and errors are due to the type of vessel used for holding the sample. All metal vessels give concordant results but glass dishes can be used under some conditions. Other nonconducting vessels, such as porcelain or paraffin show variations reaching as high as 800%. S. L. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



A criticism of the use of the photographic method for the investigation of the colloidal state of polonium. I. E. Starik and M. Yu. Deizenrot-Muisovskaya. *Compt. rend. acad. sci. U. R. S. S.* [N. S.], 1, 540-3(in German 543-6)(1934).—Exptl. evidence is given to prove that the photographic method is unsuitable for the investigation of the colloidal state of radioactive elements because of the adsorption of these elements on mica, vaseline, etc., used to coat the photographic plate. M. McMahon



The geochemistry of uranium and radium. I. E. Starik. *Akad. V. I. Vernadskomu Pyatidesyatiletiyu Nauch. Deyatelnosti* 1, 445-62(1936); *Chem. Zentr.* 1938, I, 1655.—The leaching out of U and Ra from minerals by ground water is discussed. Expts. show that Ra is more readily extd. by neutral, weakly acid or weakly alk. media than U. It is assumed that Ra is not built into the crystal lattice of the U-contg. minerals but is present rather as an inclusion in the capillaries of the mineral. U, on the other hand, is built into the crystal lattice. In this way the difference in the geochem. behavior of the 2 elements is explained. The migration of U is therefore greatly retarded since it can occur only with soln. of the U-contg. mineral. It can be expected, however, that U once in soln. is more readily held in soln. than other elements, especially Ra, which can be transported only short distances in soln. In secondary minerals the radioactive equil. is destroyed because of the migration of Ra.

M. G. Moore

1ST AND 2ND ORDERS

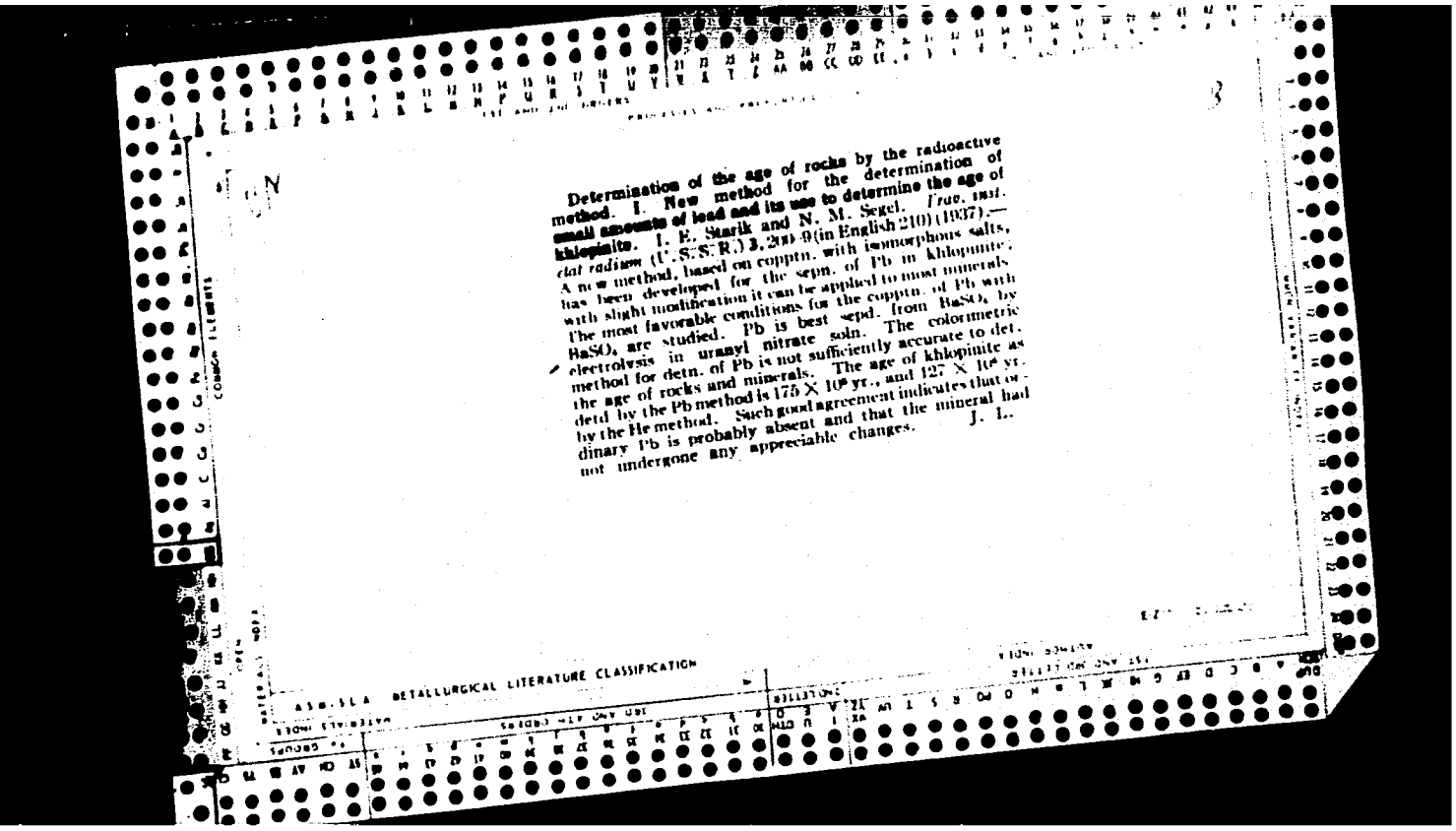
PROCESSES AND PROPERTIES INDEX

3

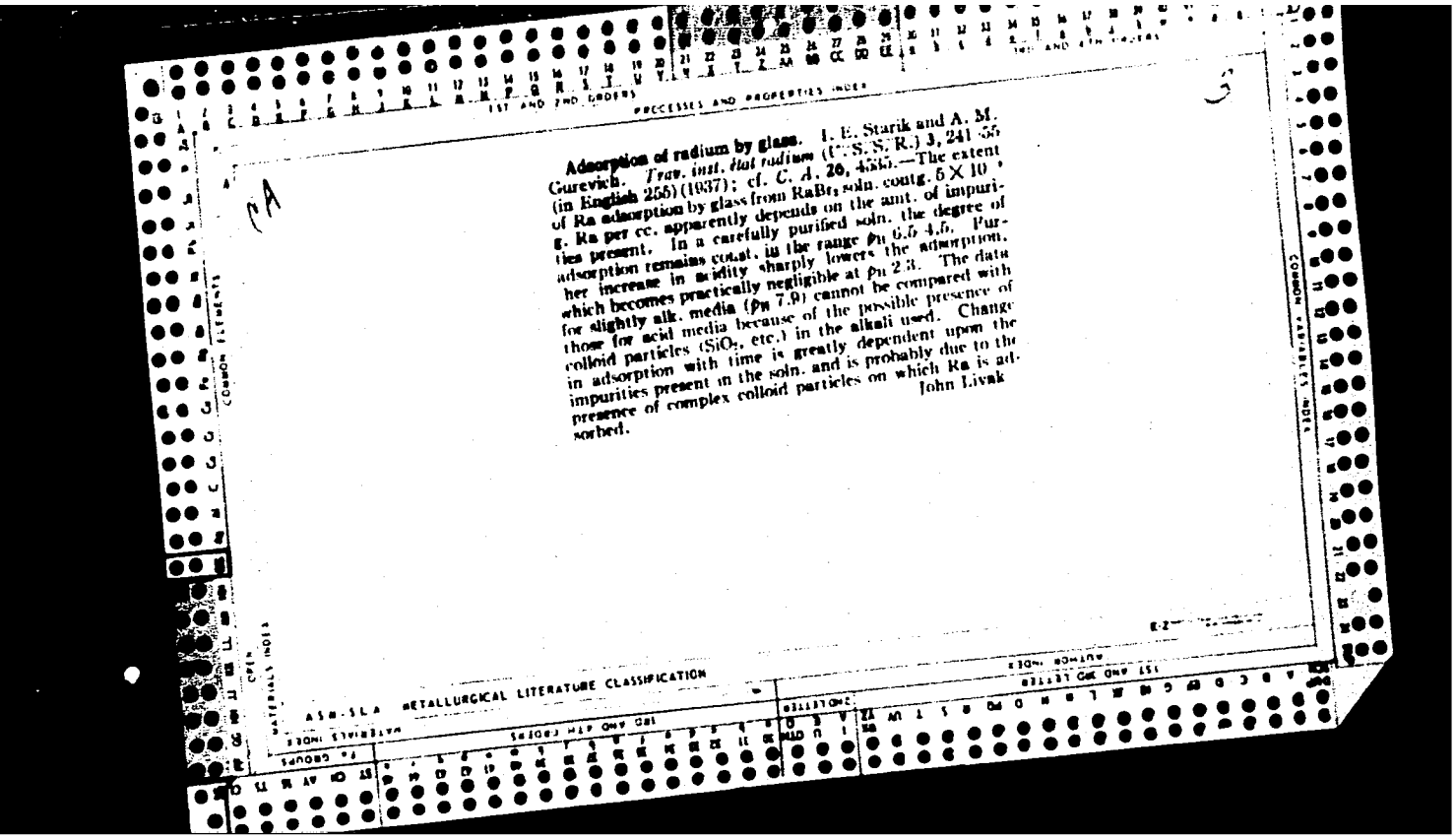
CA

Radiochemical analysis of khlopinite. I. Composition and constitution of khlopinite. I. E. Starik and N. M. ...egel. *Trav. inst. état radium* (U. S. S. R.) 3, 211-17 (in English 217) (1937). — From the relations obtained for the groups of oxides (M_2O_3:MO_2:MO = 1:1:2) present in a mineral from Khilok (Transbaikalia) there is assumed the existence of a new Cb-Ti mineral. The mineral, analyzed as M''$_2$Cb$_2$TiO$_8$, has been named "khlopinite" for V. G. Khlopin. **II. Leaching of radium and uranium from khlopinite.** *Ibid.* 218-26 (in English 226-7). —Expts. on the leaching of Ra and U from khlopinite reveal that the leaching of Ra in neutral, slightly acid, and alk. media is considerably greater than that of U. John Livak

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

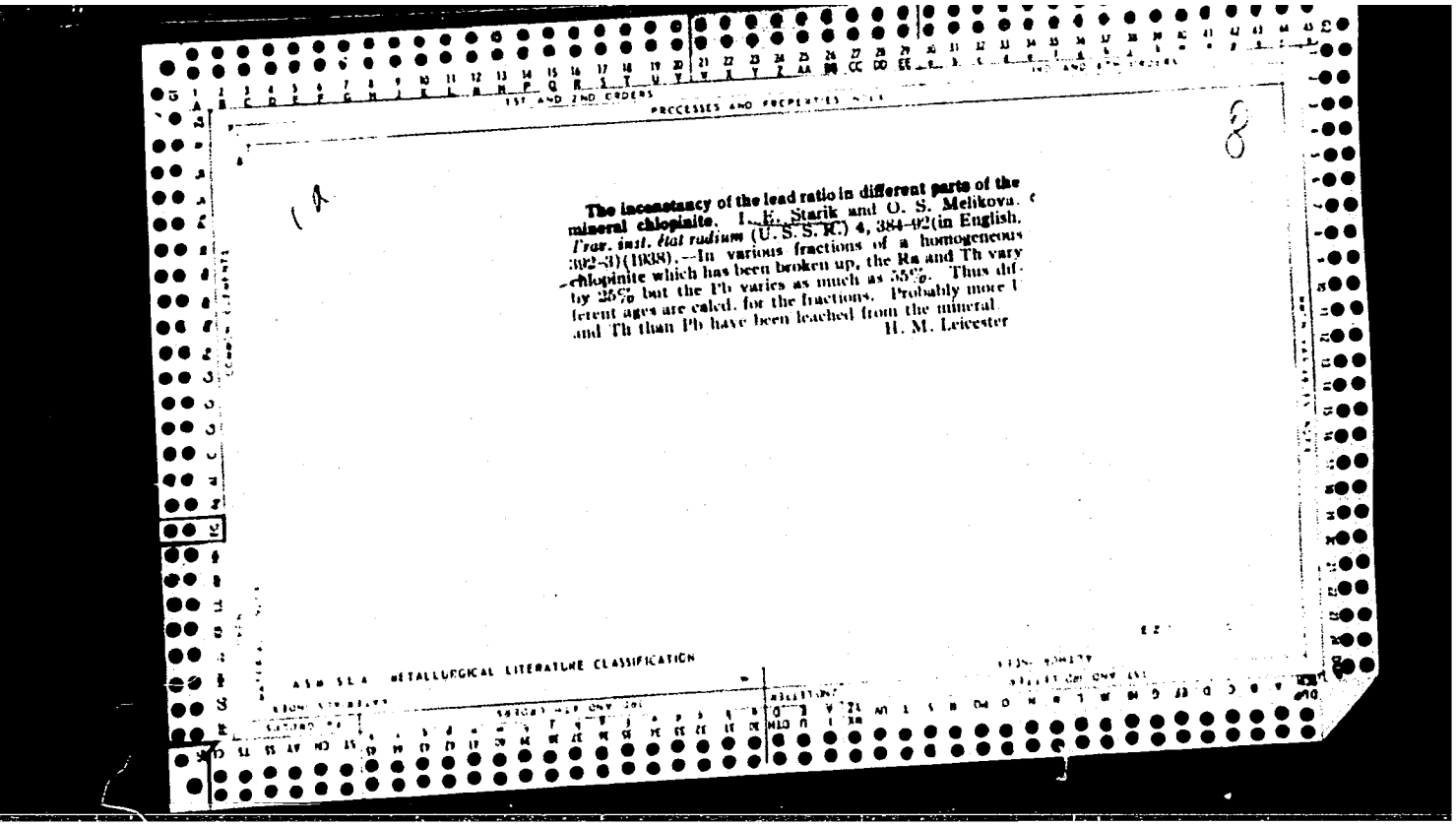


Determination of the age of rocks by the radioactive method. I. New method for the determination of small amounts of lead and its use to determine the age of khlopinite. I. E. Starik and N. M. Segel. *Trav. inst. chat radium* (U.S.S.R.) 3, 201-9 (in English 210) (1937).—A new method, based on coppttn. with isomorphous salts, has been developed for the sepn. of Pb in khlopinite; with slight modification it can be applied to most minerals. The most favorable conditions for the coppttn. of Pb with $BaSO_4$ are studied. Pb is best sepd. from $BaSO_4$ by electrolysis in uranyl nitrate soln. The colorimetric method for detn. of Pb is not sufficiently accurate to det. the age of rocks and minerals. The age of khlopinite as detd. by the Pb method is 175×10^6 yr., and 127×10^6 yr. by the He method. Such good agreement indicates that ordinary Pb is probably absent and that the mineral had not undergone any appreciable changes. J. L.



Adsorption of radium by glass. I. E. Starik and A. M. Gurevich. *Trav. inst. Etat radium* (U. S. S. R.) 3, 241-55 (in English 255) (1937); cf. *C. A.* 20, 4555.—The extent of Ra adsorption by glass from RaBr$_2$ soln. contg. 5×10^{-9} g. Ra per cc. apparently depends on the amt. of impurities present. In a carefully purified soln. the degree of adsorption remains const. in the range p_H 6.6-4.6. Further increase in acidity sharply lowers the adsorption, which becomes practically negligible at p_H 2.3. The data for slightly alk. media (p_H 7.9) cannot be compared with those for acid media because of the possible presence of colloid particles (SiO_2, etc.) in the alkali used. Change in adsorption with time is greatly dependent upon the impurities present in the soln. and is probably due to the presence of complex colloid particles on which Ra is adsorbed.

John Livak



The inconstancy of the lead ratio in different parts of the mineral chlopinite. I. E. Starik and O. S. Melikova. *Trav. inst. Etat radium* (U. S. S. R.) 4, 384–92 (in English, 392–3) (1938).—In various fractions of a homogeneous chlopinite which has been broken up, the Ra and Th vary by 25% but the Pb varies as much as 55%. Thus different ages are calcd. for the fractions. Probably more Pb and Th than Pb have been leached from the mineral.

H. M. Leicester

Migration of Ionium under natural conditions. I. B. Starik and O. S. Melikova (Compt. rend. Acad. Sci. U. R. S. S., 1941, 31, 911-913).---The Io content of carnotite with an isomorphous admixture of tyuyamunite has been determined. Although the migration of Ra from the mineral is considerable, the Io content is relatively near its equilibrium. val. A.J. M.

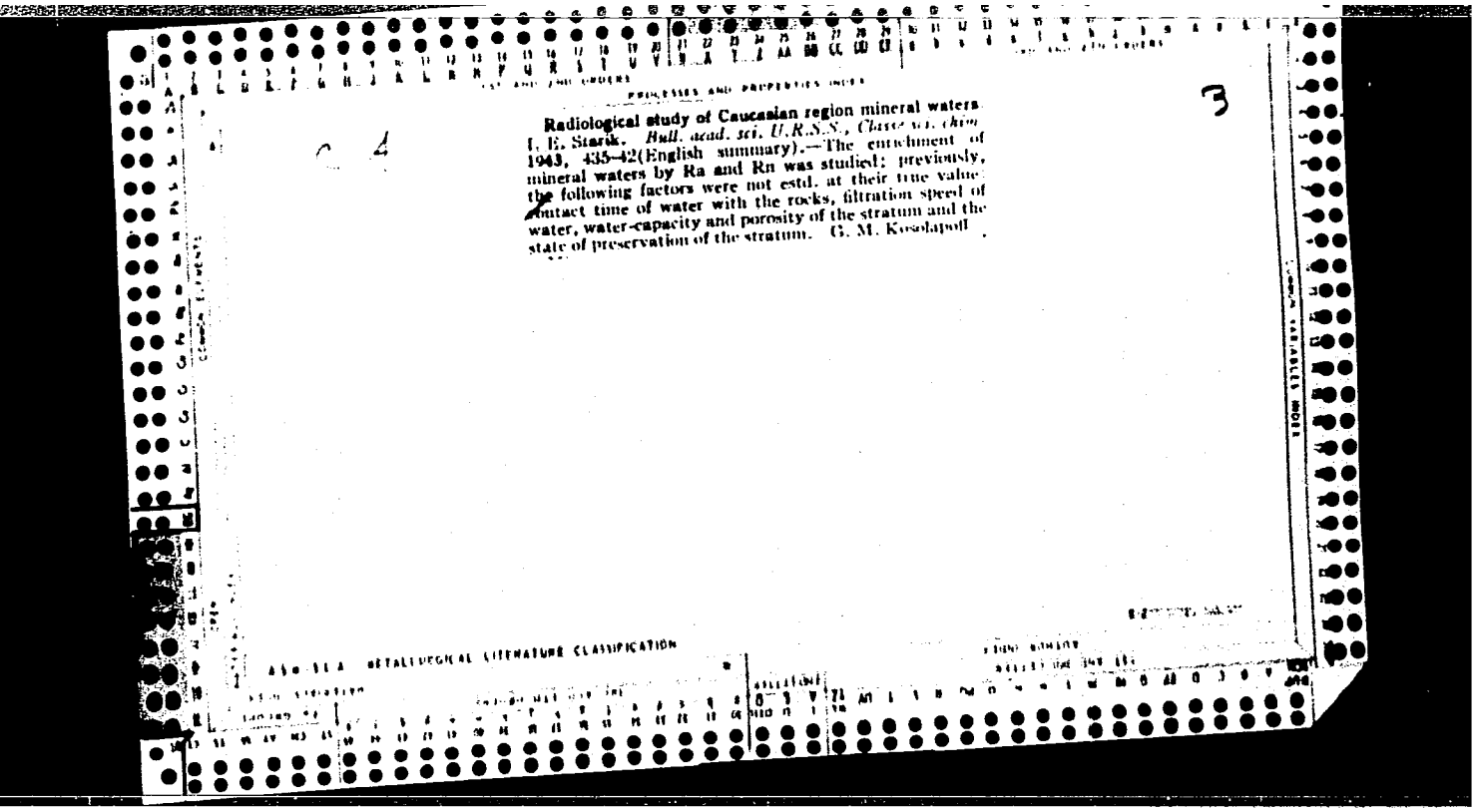
DR. Chemical Sci. Geochemistry. Mbr., Radiochemical Lab., All- Union Inst., Leningrad, -1941-.

STARIK, I. Ye.

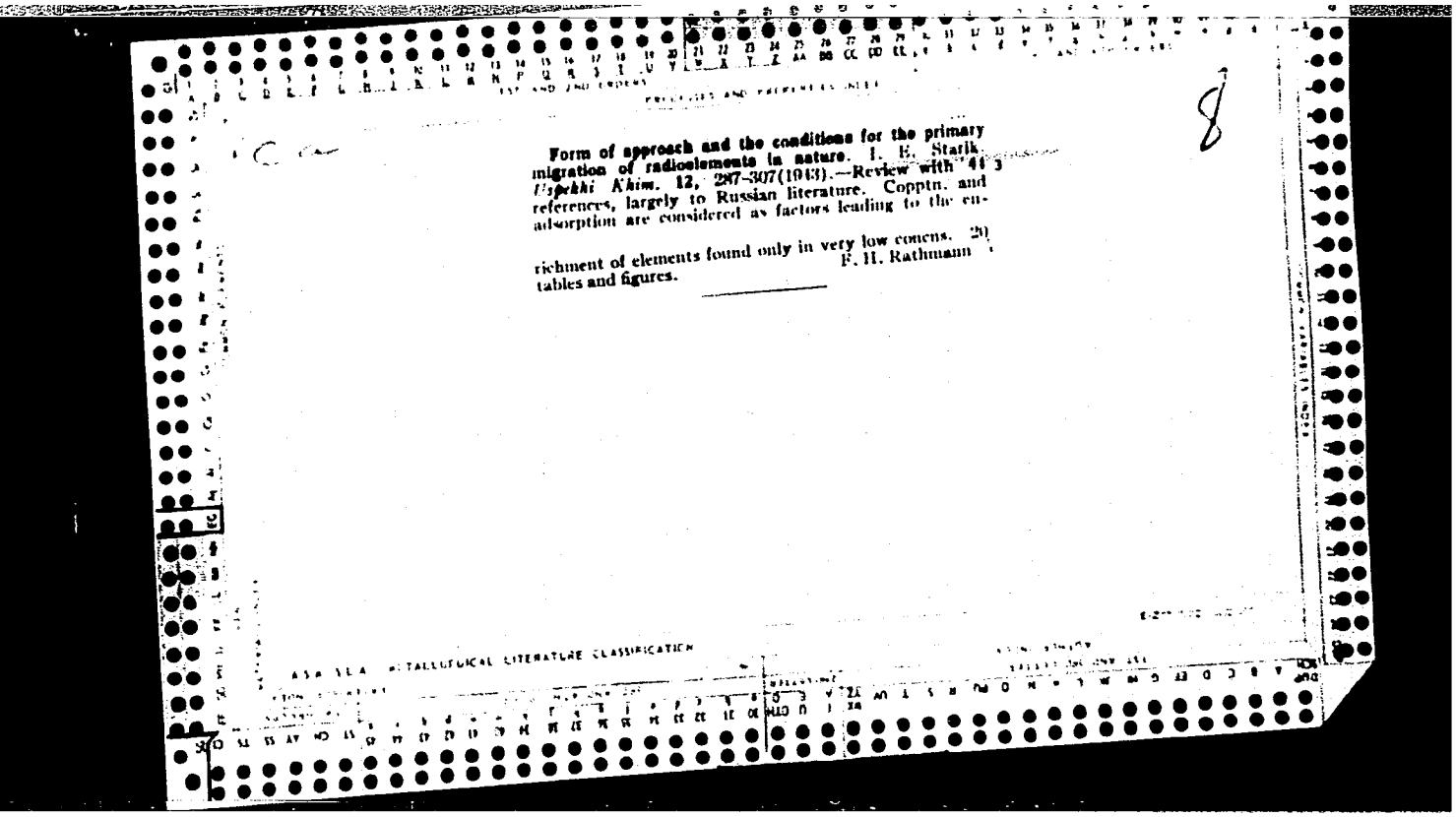
"Comparative Migration Capacity of Radium and Mesothorium: I. A Finding of Ferrithorit in North Kirghizia," Dokl. AN, 32, No 4, 1941.

Dr. [illegible]

Age of phroxenite intrusions of Afrikanda and Ozernaja Varaca in the Kola Peninsula. A. K. Gerling and I. E. Starik (Compt. rend. Acad. Sci, U. R. S. S., 1962, 35, 153-154).—Two shorlomite specimens from the above intrusions were investigated, their content of He, Ra, and Th being determined. The two intrusions were formed simultaneously ~340 x 10^6 years ago. A. S. ..



Radiological study of Caucasian region mineral waters. I. E. Starik. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1943, 435–42(English summary).—The enrichment of mineral waters by Ra and Rn was studied; previously, the following factors were not estd. at their true value: contact time of water with the rocks, filtration speed of water, water-capacity and porosity of the stratum and the state of preservation of the stratum. G. M. Kosolapoff



Form of approach and the conditions for the primary migration of radioelements in nature. I. E. Starik. *Uspekhi Khim.* 12, 287-307(1943).—Review with 413 references, largely to Russian literature. Copptn. and adsorption are considered as factors leading to the enrichment of elements found only in very low concns. 20 tables and figures. F. H. Rathmann

STARIK, I. Ye., Order Labor Red Banner, 1945.

"On the Geochemistry of the Carboniferous and Permian Deposits of the Chistopol Region of Tataria," Dokl AN, 49, No 9, 1945. Cor. Mbr., Acad. Sci., -1947-, Consultant, Nismath AG, Germany.

PA 57T9

USSR/Acad Sci — Aug 1947
Chem - Acad Sci
Radium

"June Session of Department of Chemical Sciences" 1½ pp

"Vest Akad Nauk SSSR" No 8

Session called in honor of 25th anniversary of the Radium Institute of the Academy of Sciences. I. Ye. Starik, Acting Director of the Radium Institute, read a paper on the work of the Institute. Twenty-eight workers awarded prizes and medals: Academician V. G. Khlopin, Director of the Institute; Academician P. I. Lukirskiy; B. A. Nikitin, I. Ye. Starik,

57T9

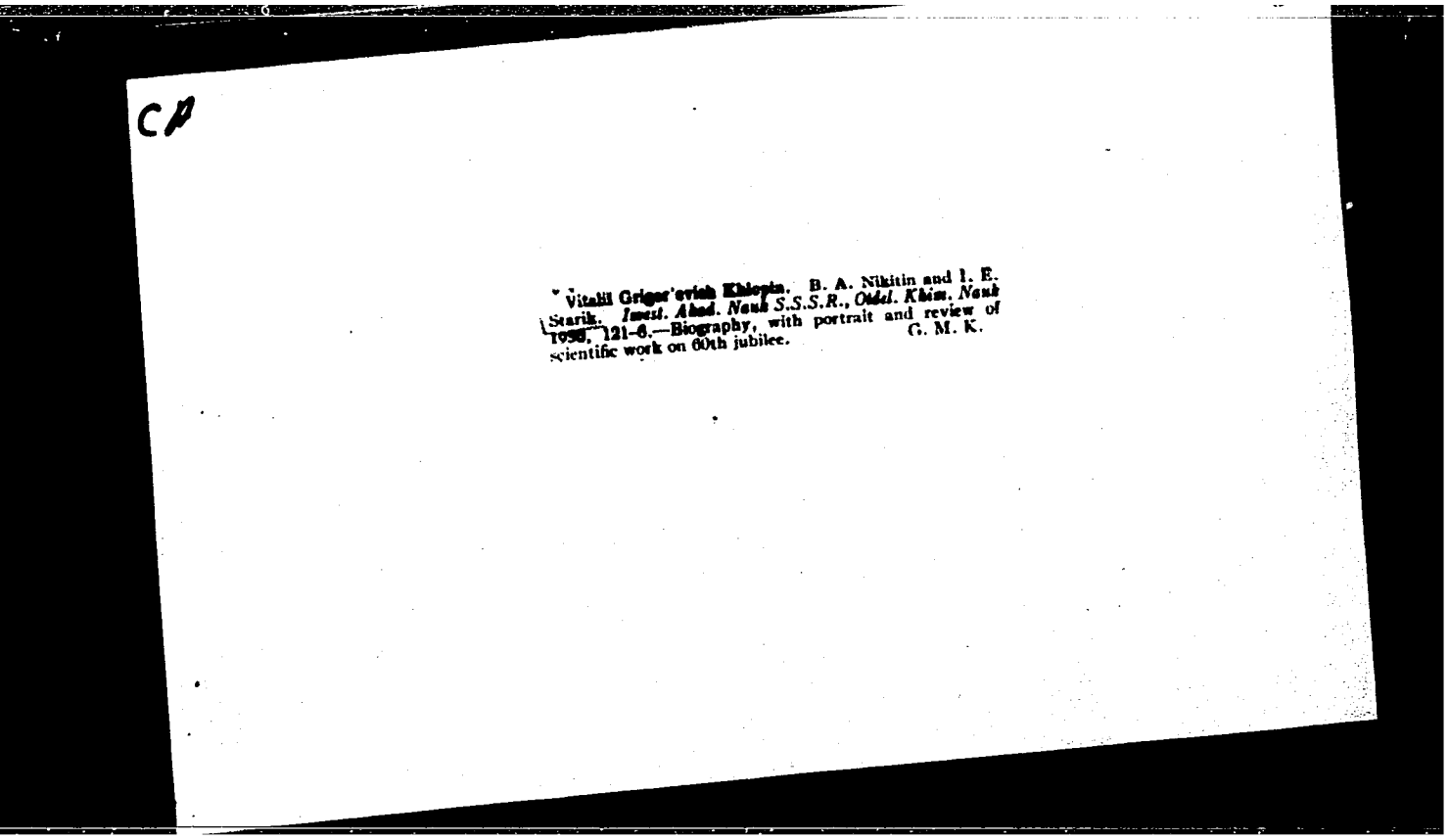
USSR/Acad Sci (Contd) — Aug 1947

and A. A. Grinberg, Corresponding Members of the Academy of Sciences; M. G. Meshcheryakov, M. A. Pavlik-Khlopina, and A. Kh. Ratner, Candidates in Chemical Sciences, etc. Several scientists, among them A. N. Nesmeyanov and A. F. Kapustinskiy, submitted articles and papers for judgment.

57T9

STARIK, I. YE.

Mbr., Sci. Council, -1947-.
Deputy Dir., -1947-.



CA

Vitalii Grigor'evich Khlopin. B. A. Nikitin and I. E. Starik. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1938, 121–6.—Biography, with portrait and review of scientific work on 60th jubilee. G. M. K.

1. STARIK, I.Ye.

2. USSR (600)

4. Geological Time

7. Current state of radioactive methods of determining the age of old and young formations, Izv.AN SSSR. Ser.geol. no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

PA 241T43

STARIK, I. YE.

USSR/Geophysics - Radioactive Methods Nov/Dec 52

"Contemporary State of Radioactive Methods for the Determination of Age of Old and Young Formations," I. Ye. Starik

"Iz Ak Nauk SSSR, Ser Geol" No 6, pp 11-20

Presents committee's report, given at a session of Dept of Geologico-Geographical Sci, Acad Sci USSR, on 12-13 Apr 52, on detn of the abs age of geological formations. Concludes that present methods are unsatisfactory and require more persistent, collective efforts by geologists, geophysicists, physicists, and chemists.

241T43

(CA 47 no. 14: 6837 '53)

1. STARIK, I. YE.; RATNER, A. P.

2. USSR 600

4. Radioactivity

7. "Chemistry of radioactive elements," collected works. Reviewed by I. YE. Starik, A. P. Ratner, Sov. kniga, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. [illegible] IK, I. Ye.

2. USSR (600)

4. Radioactivity

7. Current state of radioactive methods of determining the age of old and young formations. Izv. AN SSSR. Ser. geol. No. 6, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

STARIK, I.Ye., otvetstvennyy redaktor; SHCHERBAKOV, D.I., akademik, redaktor; VINOGRADOV, A.P., akademik, redaktor; BARANOV, B.I., professor, redaktor; GERLING, E.K., professor, redaktor; LEVIN, B.Yu., kandidat fiziko-matematicheskikh nauk, redaktor; KRYLOV, A.Ya., redaktor; PEKARSKAYA, T.B., kandidat geologo-mineralogicheskikh nauk; MYASNIKOV, I.A., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Transactions of the first session of the Commission on Determining the Absolute Age of Geologic Formations] Trudy pervoi sessii komissii po opredeleniiu absoliutnogo vozrasta geologicheskikh formatsii; 12-15 aprelia 1952 g. Moskva, Izd-vo Akademii nauk SSSR, 1954. 231 p.(MLRA 8:1)

1 Chlen-korrespondent Akademii nauk SSSR (for Starik). 2. Akademiya nauk SSSR. Otdeleniye geologo-geograficheskikh nauk.
(Earth--Age)

IOFFE, A.F.; LEBEDEV, A.A.; FOK, V.A.; STARIK, I.Ye.; KONSTANTINOV, B.P.; DZHELEPOV, B.S.; PERFILOV, N.A.; DOBRETSOV, L.N.; STARODUBTSEV, A.V; NEMILOV, Yu.A.; ZHDANOV, A.P.; MURIN, A.N.; AGLINTSEV, K.K.; TSARE-VA, T.V.; SHUL'MAN, A.R.; YEREMEYEV, M.A.

P.I.Lukirskii; obituary. Vest.AN SSSR 24 no.12:62 D '54.(MLRA 8:1)
(Lukirskii, Petr Ivanovich, 1894-1954)

STARIK, I.Ye., redaktor; SHCHERBAKOV, D.I., akademik, redaktor; VINOGRADOV, A.P., akademik, redaktor; POLKANOV, A.A., akademik, redaktor; SHATSKIY, N.S., akademik, redaktor; BARANOV, V.I., professor, redaktor; PEKARSKAYA, T.B., kandidat geologo-mineralogicheskikh nauk, redaktor; CHERDYNTSEV, V.V., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Transactions of the third session of the Committee for Determining the Absolute Age of Geological Formations, March 25-27, 1954] Trudy tret'ei sessii, 25-27 marta 1954. g. Moskva, 1955. 260 p. [Microfilm] (MLRA 9:1)

1. Akademiya nauk SSSR. Komissiya po opredelniya absolyutnogo vozrasta geologicheskikh formatsii. 2. Chlen-korrespondent AN SSSR (for Starik). (Geological time)

STARIK, I.YE

Relative leaching of uranium and radium isotopes from uraninite. I. E. Starik, F. S. Starik, and E. P. Petrzhak. *Byull. Komissii Opredelen. Absolyut. Vozrasta Geol. Formatsii, Akad. Nauk S.S.S.R.* 1955, No. 1, 29–32.—From 1 to 5-g. samples of uraninite particles (dimensions 0.5–1.0 mm.) contg. 54.3 ± 0.3 wt. % U, $1.5 \times 10^{-7} \pm 0.06$ g. Ra/g. mineral, and 2.3 ± 0.1 wt. % Th were leached with HNO_3, H_2O, and Na_2CO_3 at room temp. for one week. The amts. of leached U and Ra in 0.1, 0.01, 0.001, 0.0001*N* HNO_3, distd. water, and 0.001, 0.01, 0.1*N* Na_2CO_3 were, resp.: 11 ± 1.5, 11.2 ± 0.8; 1.6 ± 0.1, 3.5 ± 0.05; 0.007 ± 0.001, 0.2 ± 0.016; 0.007 ± 0.001, 0.1 ± 0.01; 0.004 ± 0.0005, 0.075 ± 0.005; 0.03 ± 0.007, 0.016 ± 0.002; 0.4 ± 0.07, 0.09 ± 0.003; and 1.8 ± 0.1, 0.25 ± 0.05 wt. %. With respect to U, as data show, Ra was leached preferentially in every case. A. P. Kotelkin

Radium Inst. im. V. G. Khlopin, AS USSR

15-57-1-497

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1, p 80 (USSR)

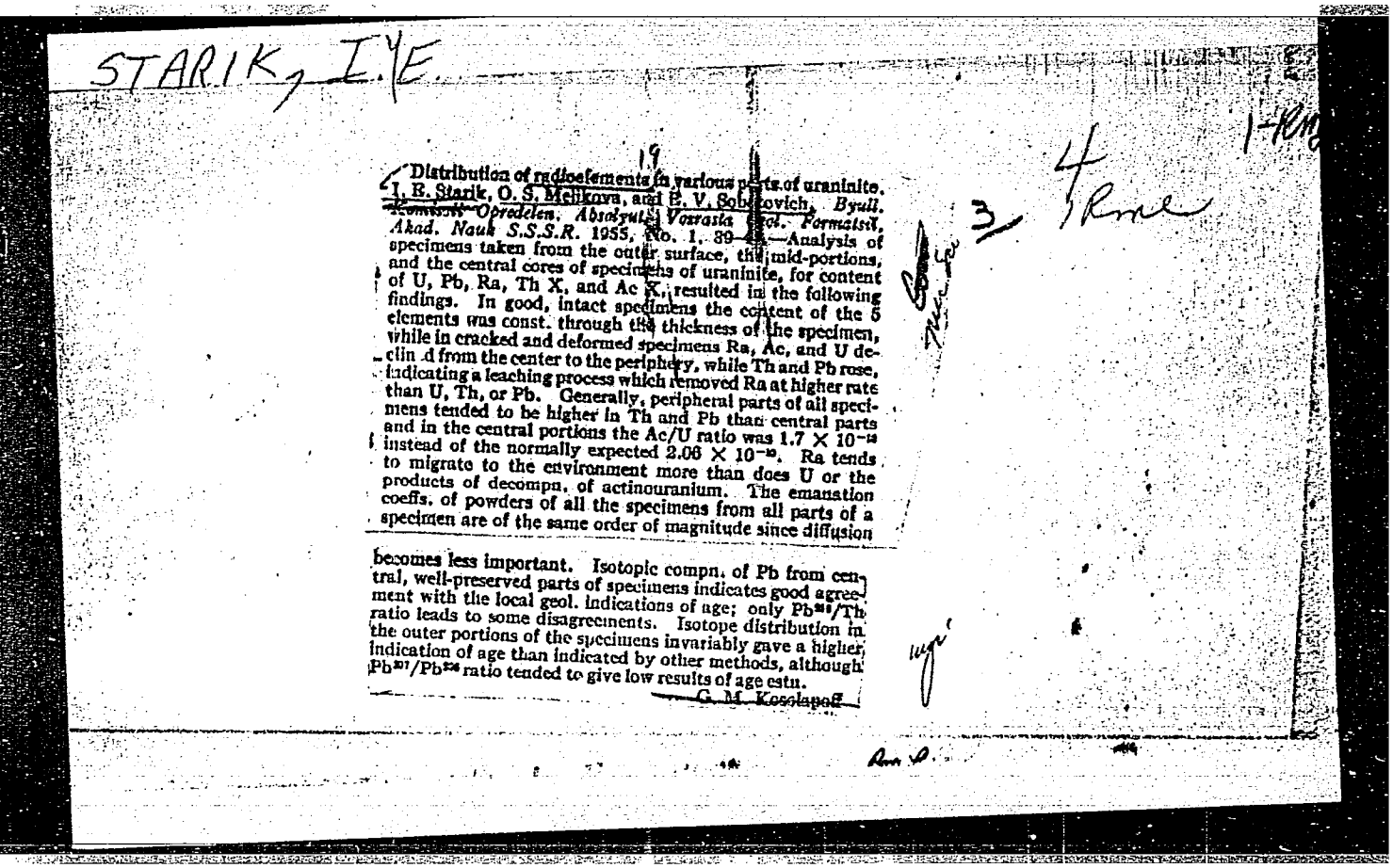
AUTHORS: Starik, I. Ye., Melikova, O. S., Kurbatov, V. V., Aleksandruk, V. M.

TITLE: The Relation of Temperature to the Emanation Factor of Uraninite for Radon, Thoron, and Actinon (Zavisimost' emaniruyushchey sposobnosti uraninita po radonu, toronu i aktinonu ot temperatury)

PERIODICAL: Byul. Komis. po opredeleniyu absolyut. vozrasta geol. formatsii AN SSSR, 1955, Vol 1, pp 33-38.

ABSTRACT: Uraninite containing $2.16 \cdot 10^{-7}$ g/g Ra, $2.39 \cdot 10^{-1}$ g/g Th, and $8.0 \cdot 10^{-11}$ g/g Ac was studied for emanations of radon, actinon, and thoron during heating. It was found that the emanation factor for radon (K_{Rn}), equal to 2.1, remains almost constant up to 90°. It decreases sharply to 1.0 in the interval from 90° to 100°. The emanation factor for thoron (K_{Tn}) is 1.14 at 21°, and it gradually decreases to 0.75 on heating to 100°. The

Card 1/2



STARIK, I. E.

19

Distribution of radioelements in various parts of uraninite. I. E. Starik, O. S. Meilkova, and E. V. Sobolevich. *Byull. Komissii Opredelen. Absolyut. Vozrasta Geol. Formatsii, Akad. Nauk S.S.R.* 1955, No. 1, 89–[illegible].—Analysis of specimens taken from the outer surface, the mid-portions, and the central cores of specimens of uraninite, for content of U, Pb, Ra, Th X, and Ac X, resulted in the following findings. In good, intact specimens the content of the 5 elements was const. through the thickness of the specimen, while in cracked and deformed specimens Ra, Ac, and U declin d from the center to the periphery, while Th and Pb rose, indicating a leaching process which removed Ra at higher rate than U, Th, or Pb. Generally, peripheral parts of all specimens tended to be higher in Th and Pb than central parts and in the central portions the Ac/U ratio was 1.7×10^{-12} instead of the normally expected 2.06×10^{-12}. Ra tends to migrate to the environment more than does U or the products of decompn. of actinouranium. The emanation coeffs. of powders of all the specimens from all parts of a specimen are of the same order of magnitude since diffusion becomes less important. Isotopic compn. of Pb from central, well-preserved parts of specimens indicates good agreement with the local geol. indications of age; only Pb^{208}/Th ratio leads to some disagreements. Isotope distribution in the outer portions of the specimens invariably gave a higher indication of age than indicated by other methods, although Pb^{207}/Pb^{206} ratio tended to give low results of age estn.

G. M. Kosolapoff

STARIK I YE

USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1234

Author: Starik, I. Ye., Starik, A. S., Lozhkina, G. S., and Talitskaya, L. V.

Institution: Academy of Sciences USSR

Title: A Method for the Determination of Ionium

Original Periodical: Byul. komis. po opredeleniyu absolyut. vozrasta geol. formatsiy AN SSSR, 1955, Vol 1, 47-52

Abstract: After dissolution of the resin in HNO_3 the Th isotopes are deposited on Ce (carrier) as the oxalates. RaD, RaE, and Po are separated by electrolysis in 1 N HNO_3 by passing a 100 ma, 2.1 v current through the solution for 9 hours. UX_1 is used as an indicator for the completeness of Io separation. It has been established that: (1) Complete removal of Ra and U is achieved by double deposition of Ce(Io) oxalate; (2) the deposit of Ce oxalate after double deposition adsorbs 7-12% Po, >30% RaE, and 2-3% RaD; and (3) when H_2S is utilized to separate Ce(Io) from RaD, RaE, and RaF, complete separation is

Card 1/2

STARIK, I. Ye.

USSR/ Geology - Rock formation

Card 1/1 Pub. 46 - 6/21

Authors : Starik, I. Ye.; Murina, G. A.; and Krylov, A. Ya.

Title : Criteria of the suitability of minerals for determination of their age by the helium method

Periodical : Izv. AN SSSR. Ser. geol. 20/2, 67 - 71, Mar-Apr 1955

Abstract : By making use of the fact, established through research, that there is a definite connection between the form in which radio-active elements are present in a mineral and the preservation of helium in the mineral during geological times, the age of rocks was successfully determined. Twenty types of granite were subjected to this helium method to determine their age. Four references: 1 USA and 3 Soviet (1933-1946). Tables; graphs.

Institution : .....

Submitted : December 1, 1954

STARIK, I. Ye.

USSR/Chemistry - Technical books

Card 1/1 Pub. 147 - 22/22

Authors : Starik, I. Ye.; Murin, A. N.; and Nefedov, V. D.

Title : Critique and bibliography

Periodical : Zhur. fiz. khim. 29/11, 2110-2110-2111, Nov 1955

Abstract : Critical review is presented of the book by An. N. Nesmeyanov, A. V. Lapitskiy and N. P. Rudenko, entitled, "Derivation of Radioactive Isotopes," published by Goskhimizdat (State Publication of Chemical Literature) in 1954.

Institution : .....

Submitted : .....

STARIK, I.Ye.; RATNER, A.P. [deceased]; GROSHKOV, G.V.; MURIN, A.N.; STARIK, A.S.; GREBENSHCHIKOVA, V.I.; KLOKMAN, V.P.; NEFEDOV, V.D.; LUR'YE, B.G.; ISHINA, V.A.; SMIRNOV, L.A.; YEFIMOVA, Ye.I.; TOROPOVA, M.A.; SIMONYAK, Z.N.; FRENKLIKH, M.S.; SHCHEMELEVA, Ye.V., redaktor; VODOLAGINA, S.D., tekhnicheskiy redaktor

[A collection of practical studies in radio chemistry] Sbornik prakticheskikh rabot po radiokhimii. [Leningrad] 1956. 210 p. (MLRA 10:1)

1. Leningrad. Universitet.
(Radiochemistry)

NIKITIN, Boris Aleksandrovich; STARIK, I.Ye., otvetstvennyy redaktor; OKNRBLOM, M.N., redaktor izdatel'stva; SMIRNOVA, A.V., tekhnicheskiy redaktor

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akademii nauk SSSR, 1956. 349 p. (MLRA 9:11)

1. Chlen-korrespondent AN SSSR (for Nikitin, Starik)
(Chemistry, Physical and theroretical)
(Radioactivity)

FAUL, Henry, red.; AVDZEYKO, G.V.[translator]; STARIK, I.Ye., red.

[Nuclear geology] IAdernaia geologiia. Pod red. i s predisl. I.E.Starika. Moskva, Izd-vo inostr.lit-ry, 1956. 555 p. (MIRA 15:7)

(Geophysics) (Nuclear physics) (Radioactivity)

STARIK, I. YE.

B-7

USSR / Isotopes.

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26052.

Author : I.Ye.Starik, N.I. Alekseyenko, N.G. Rozovskaya

Title : Colloid Properties of Polonium

Orig Pub. Iz. Ak Nauk SSSR, Otd Khim. Nauk, 745-63, 1956

Abstract : The possibility of existence of true colloids in very diluted solutions (10^{-13} to 10^{-9} M) was studied on the example of Po. The results of the study of the dependence on the solution concentration and pH of the processes of electrochemical separation of Po in Cu, adsoprtion and desorption on glass of various composition, centrifuging, ultrafiltration and radiography confirm the concepts of different states of Po in different media, proposed by the authors. At pH equal to 1 - 4, Po is in the ion non-hydrolized state; hydrolysis and the formation of positively charged colloidal particles starts at pH equal to 6 - 7; at pH equal to about 8 the recharge of particles takes place; insoluble Po compounds are formed and their equilibrium with

Card : 1/2

[illegible] mical separation of Po. It was established that the formation of colloids of radioactive elements did not depend on their specific properties connected with their radioactive nature.

Card : 2/2

STARIK, I. YE.

B-7

USSR / Isotopes.

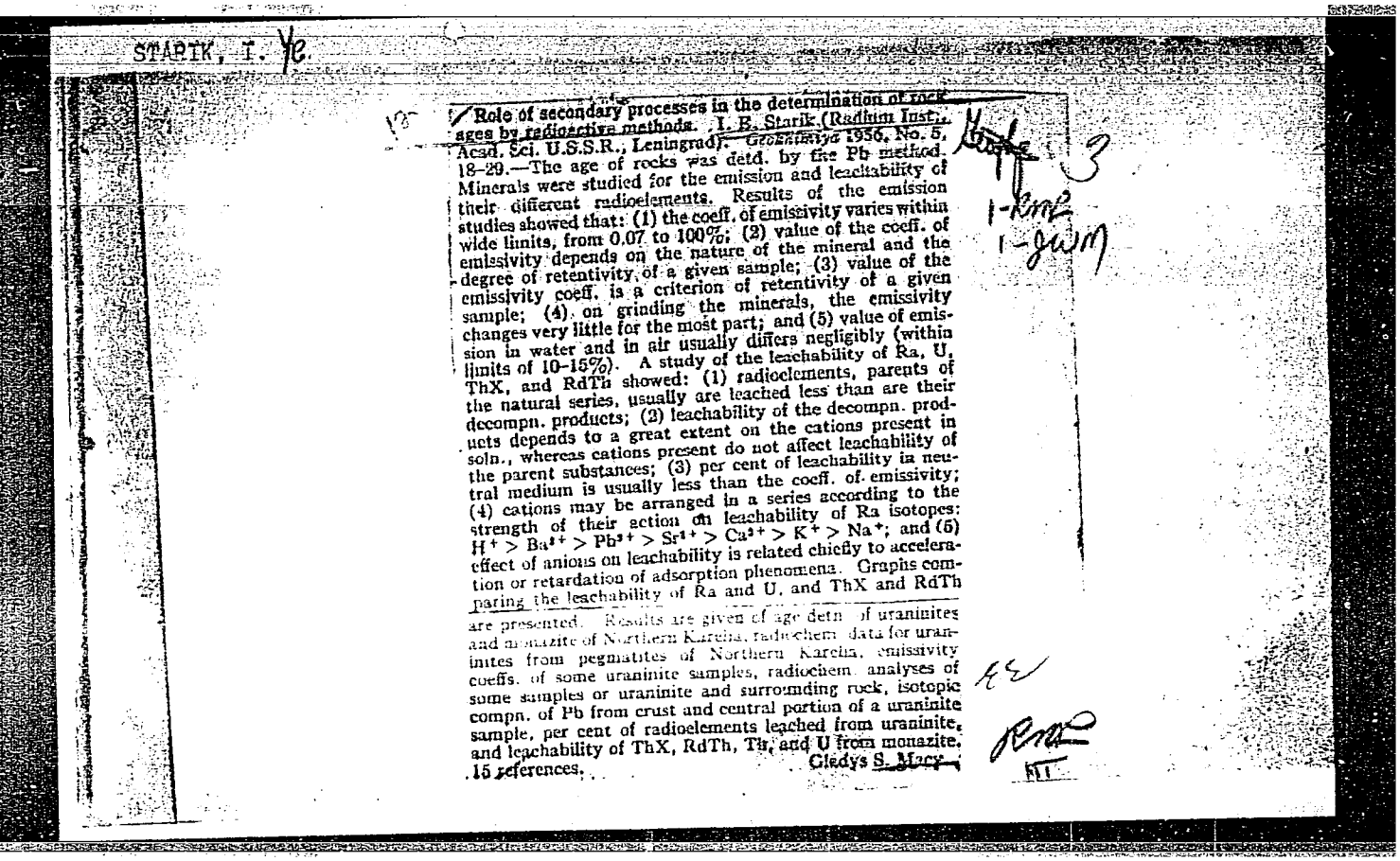
Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26053

Author : I.Ye. Starik, N.I. Alekseyenko
Title : Radiographic Method of Studying State of Radioactive Elements in Diluted Solutions.

Orig Pub : Zh. neorgan. khimii, 1, No 7, 1676 - 1679, 1956

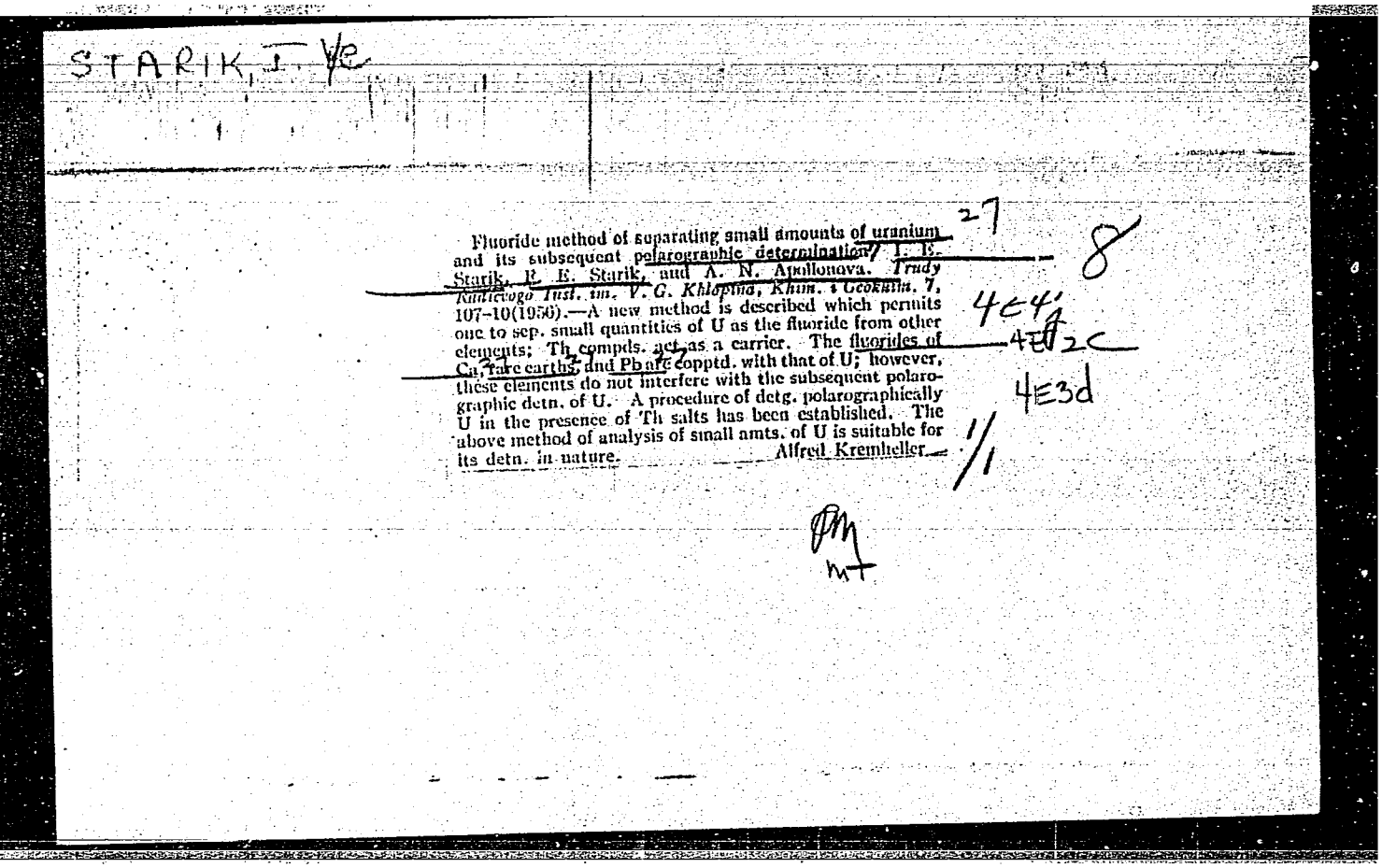
Abstract : With a view to deciding upon the question of the applicability of the radiographic method to the study of the state of radioactive elements in diluted solutions, the character of the absorption of Po by photoemulsion, as well as its adsorption on mica and glass depending on the concentration of Po in the solution (1×10^{-11} to 5×10^{-8} M) and on pH (1.3 to 9.5) were investigated. Nuclear photographic plates of the A-2 type with an emulsion layer 60 μ thick were used. It was shown that the blackening of the photographic plate increased with the concentration rise of Po.

Card : 1/2



STARIK, I. Ye.

Role of secondary processes in the determination of rock ages by radioactive methods. I. E. Starik (Radium Inst., Acad. Sci. U.S.S.R., Leningrad). *Geokhimiya* 1956, No. 5, 18–29.—The age of rocks was detd. by the Pb method. Minerals were studied for the emission and leachability of their different radioelements. Results of the emission studies showed that: (1) the coeff. of emissivity varies within wide limits, from 0.07 to 100%; (2) value of the coeff. of emissivity depends on the nature of the mineral and the degree of retentivity of a given sample; (3) value of the emissivity coeff. is a criterion of retentivity of a given sample; (4) on grinding the minerals, the emissivity changes very little for the most part; and (5) value of emission in water and in air usually differs negligibly (within limits of 10–15%). A study of the leachability of Ra, U, ThX, and RdTh showed: (1) radioelements, parents of the natural series, usually are leached less than are their decompn. products; (2) leachability of the decompn. products depends to a great extent on the cations present in soln., whereas cations present do not affect leachability of the parent substances; (3) per cent of leachability in neutral medium is usually less than the coeff. of emissivity; (4) cations may be arranged in a series according to the strength of their action on leachability of Ra isotopes: $H^+ > Ba^{2+} > Pb^{2+} > Sr^{2+} > Ca^{2+} > K^+ > Na^+$; and (5) effect of anions on leachability is related chiefly to acceleration or retardation of adsorption phenomena. Graphs comparing the leachability of Ra and U, and ThX and RdTh are presented. Results are given of age detn. of uraninites and monazite of Northern Karelia, radiochem. data for uraninites from pegmatites of Northern Karelia, emissivity coeffs. of some uraninite samples, radiochem. analyses of some samples or uraninite and surrounding rock, isotopic compn. of Pb from crust and central portion of a uraninite sample, per cent of radioelements leached from uraninite, and leachability of ThX, RdTh, Th, and U from monazite. 15 references. Gladys S. Macy



STARIK, I. Ye

Fluoride method of separating small amounts of uranium and its subsequent polarographic determination. I. E. Starik, R. E. Starik, and A. N. Apollonova. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 107–10(1956).—A new method is described which permits one to sep. small quantities of U as the fluoride from other elements; Th compds. act as a carrier. The fluorides of Ca, rare earths, and Pb are copptd. with that of U; however, these elements do not interfere with the subsequent polarographic detn. of U. A procedure of detg. polarographically U in the presence of Th salts has been established. The above method of analysis of small amts. of U is suitable for its detn. in nature.

Alfred Kremheller

27

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4E4f

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Starik, I. Ye.

27

New aspect of analysis of small amounts of Cr^{+++} based on the determination of the extent of extinction of luminescence of uranium. I. E. Starik, F. E. Starik, and G. B. Kostyrev. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 111–13(1950); cf. following abstr.—Small amts. of Cr (down to 10^{-4} g.) can be detected by its quenching action of luminescence of U in a NaF bead. If 8 × 10^{-4} g. U is present in the NaF bead, the luminescence intensity is diminished by the addn. of more than 10^{-3} g. of Cr^{+++} or 10^{-7} g. of CrO_4^{--}; complete extinction of luminescence is observed with addns. above 10^{-3} g. A. K.

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1-4 E 4c
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15-1957-10-14145

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, p 124 (USSR)

AUTHORS: Starik, I. Ye., Starik, F. Ye., Atrashenkok, L. Ya., Kostyrev, G. B., Kosyakov, V. N., Krylov, A. Ya.

TITLE: The Influence of Different Elements on the Fluorescence of Uranium in Sodium Fluoride (Vliyaniye razlichnykh elementov na lyuminestsentsiyu urana vo ftoristom natrii)

PERIODICAL: Tr. Radiyev. in-ta AN SSSR, 1956, vol 7, pp 114-125

ABSTRACT: The principal merits of the fluorescent method of determining U are its simplicity, speed, and high sensitivity. It is possible to determine up to 1 x 10^{-10} grams of U in the bead. The precision of the determination is generally close to 20%. In any method using different activators, measuring devices, and sources of ultraviolet light, impurities exert considerable influence by altering the fluorescence of the Uranium or by extinguishing it. The influence of 45 elements on the fluorescence of U in NaF was studied. The investigations were made on

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15-1957-10-14145

The Influence of Different Elements on the Fluorescence of Uranium in Sodium Fluoride

beads of NaF weighing 5 mg and containing 5 x 10^{-9} g of U. The elements were introduced into the bead either by mixing with NaF or with the corresponding salt, in different proportions, in case of soluble compounds, by dipping the bead of NaF, which contains a definite quantity of U, into the quenching salt solution. When using the dipping method, it is necessary to know the precise weight of the bead, inasmuch as beads of different weights take up different amounts of solution. The intensity of fluorescence is strongly influenced by the surface of the bead, which is a function of the quality of fusion, of the cooling of the bead, and also of the quantity of NaF. The elements investigated may be divided approximately into five groups, according to their influence on the fluorescence of uranium. 1) Na, K, Rb, Zn, Ti, S, Mo, W, Cl, Br, and J show essentially no effect, even in relatively large quantities. 2) Be, Ce, La, Th, P, Ni, Fe, Mn, Cu, Sr, Cd, Mg, B, Se, Cs, Zn, Ba, Li, and Si extinguish fluorescence when present in the bead in large quantities (on the order of several per cent of the weight of the bead). 3)

Card 2/3

15-1957-10-14145

The Influence of Different Elements on the Fluorescence of Uranium in Sodium Fluoride

Ag, Hg, Pb, Bi, Cr, and Co sharply extinguish the fluorescence when present in quantities several times ten per cent of the weight of the bead. 4) Ca, Al, Tl, and Sn strengthen the fluorescence or produce changes in the color. When the relative concentration of U to Ca is 1:10,000, U fluoresces green. With higher Ca content, the intensity of fluorescence begins to increase and then decrease. The fluorescent color changes from yellow-green to blue. When the concentration of Al is $5 \cdot 10^{-5}$ g in the bead, it does not fuse to transparency. Tl and Sn strengthen the fluorescence when their concentration in the bead is $1 \cdot 10^{-5}$-$5 \cdot 10^{-5}$ g. 5) Ce, V, Nb, Ta, and Sb produce distinctive fluorescence in NaF. Ce and V give a red color, Sb a medium blue. The fluorescence of Nb and Ta is very similar to that for uranium. Some elements have a two-fold effect, depending on their concentration: with low concentrations they increase the fluorescence; with high they extinguish it.

Card 3/3

A. A. Rozbianskaya

STARIK, I YE.

19

Sampling of granites for radiochemical investigation. I. E. Starik and A. Ya. Krylov. *Trudy Radievogo Inst. im. V. G. Khlopina, Khim. i Geokhim.* 7, 149–54(1956).—Suggestions and examples are given for fitting the type of sampling to the size and character of the body being investigated and the knowledge desired. D. J. Milton

19

Geochemistry of radioactive elements in rocks of the Kirovograd-Zhitomir magmatic complex of Ukraine. L. V. Komlev, M. S. Filippov, S. I. Danilevich, and K. S. Ivanova. *Trudy Radievogo Inst. im. V.G. Khlopina, Khim. i Geokhim.* 7, 155–99(1956).—Averages of widely varying contents of 107 samples of these Archean granites are: U 5.7×10^{-4}, Th 3.3×10^{-3}, and Ra 1.8×10^{-10}%. Different intrusives vary markedly, but there is a correlation with rock type. U is enriched in the border zones. High Th content is often connected with a rare earth (monazite) mineralization. D. J. Milton

STARIK, I.E.

27

Colloidal Properties of Polonium. I. E. Starik, N. I. Alekseenko, and N. G. Rozovskaya (*Trudy. Akad. Nauk S.S.S.R.*, 1950, [Khim.], (7), 755–763).—[In Russian]. The question of colloidal behaviour of radioactive elements in infinitely dil. soln., and whether such elements themselves form true colloids or are adsorbed by other colloids always present in soln., is one of the least clarified problems of radiochemistry. A preliminary study was made of Po, the methods used being adsorption on and desorption from glass, electrodeposition on Cu, centrifuging, ultrafiltration, all these applied to varying concentrations of Po, and autoradiography. The tabulated results of the tests, despite the fact that solubility valencies are approx., give a clear picture of their order and clarify the question of colloid-formation by the element itself. Since there is nothing sp. in the process, the methods adopted should prove equally efficient in the case of other elements (e.g. U, Ru, Ra, &c.). 17 ref.—Z. N. P.

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STARIK, I.Ye

/Luminescent determination of uranium in rocks and minerals. I. E. Starik, L. Ya. Atrashenok, and Z. Ya. Kevlor (V. G. Khlopin Radium Inst., Acad. Sci. U.S.S.R., Leningrad). *Geokhimiya* 1956, No. 8, 39-40.—The effect of different individual elements on the luminescence of U in NaF was studied. Also a study of several combinations of elements was made. The authors summarize the results obtained from these studies and report a further development of the method as applied to the study of different rocks and minerals. The method for detn. of U in rocks is as follows. The rock sample is fused with NaF and then removed from the crucible and pulverized. From the powder 5-mg. beads are prepd. for measurement of luminescence by means of a photometer. Accuracy of the measurements is ±20%. Data obtained are presented in a table. Other tables show data from the detn. of U in minerals. With an adequate U content in rocks and minerals (usually 1×10^{-6} g./g.) the quant. luminescent detn. of U is applicable without sepn. from its accessory elements. For some rocks, rock-forming minerals, and most widely distributed accessory minerals, the concns. at which the effect of the elements was eliminated were detd. A comparison of results obtained by the method used and other methods gave entirely satisfactory results.

Gladys S. Macy

STARIK, I.Ye.

Pierre Curie; on the fiftieth anniversary of his death. Izv.AN SSSR.Ser.geol. 21 no.4:120-121 Ap '56. (MLRA 9:8)
(Curie, Pierre, 1859-1906)

STARIK, I YE.

USSR/Physical Chemistry - General Problems on Isotope Chemistry B-7

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3676

Author : Starik I.Ye., Rozovskaya N.G.
Inst : Academy of Sciences USSR
Title : Study of State of Micro-Amounts of Radioelements by Desoption Method.

Orig Pub : Dokl. AN SSSR, 1956, 107, No 6, 850-852

Abstract : Investigation of desorption of Polonium (I), sorbed by different samples of glass from aqueous solutions of 0.1 N HNO_3, neutral, and 0.1 N NaOH. As desorbents were used 0.1 and 1 N HNO_3, distilled water and 0.1 N NaOH. Noted is the difference in behavior of I, sorbed from neutral and nitric acid containing media. The authors correlate this difference with the difference in the state of I in these media and consider that the method of desorption permits to form an opinion concerning the bonding strength of sorbed substance and surface and

Card 1/2

STARIK, I.YE.

3
4E4j

Determination of lead isotope composition in rocks. I. E. Starik and E. V. Sobotovich. *Doklady Akad. Nauk S.S.S.R.* 111, 395-7(1956).—Pb was sepd. from rocks by volatilization in a furnace at 1400°. The vapors were reduced with H and Pb was deposited on a cold surface. Preliminary tests showed that 80-60% of the Pb was recovered at a sublimation temp. of approx. ⅔ the m.p. of the rock. Pb was sepd. from the other volatile components by electrolysis of the nitrates. [illegible] deposited on the anode. The neutral $Pb(NO_3)_2$ soln. was pptd. with KI and tested mass-spectrographically. Volatilization of Pb did not fractionate it isotopically. The accuracy of the method was confirmed by duplicate analyses of 2 granite samples. The isotope proportions found were [illegible] 17.5- 19.40; [illegible] 15.5[illegible] 37.[illegible]; 38.[illegible]

STARIKH, I. Ye.

5

3776

DETERMINATION OF URANIUM IN THE ACCESSORY MINERALS. I. E. Starikh, L. Ya. Atrashenok, and A. Ya. Krylov (Khlopin Radium Inst.). Doklady Akad. Nauk S.S.S.R. 111, 644-6(1956) Nov. 21. (In Russian)

A method of direct fusion of U with a bead of NaF reveals the quantities of U even in the tiniest crystals of accessory minerals, without any preliminary chemical treatment. Tables showing the estimations of minimum quantities of U ($n \times 10^{-3}$ %) in mixture with other minerals. (R.V.J.)